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ORIGINAL ARTICLES.

THE TECHNIQUE AND VALUE OF SPUTUM-EXAMINATION.¹

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THE examination of sputum for tubercle-bacilli is undoubtedly the most serviceable of the known methods of differentiating pulmonary tuberculosis in its early stages from other less serious affections. The assistance to be derived from a thorough examination of the sputum in all doubtful or suspected cases is obvious when the fact is considered that tubercle-bacilli can be found in the sputum, in most cases, prior to the development of physical signs and symptoms that would warrant a positive diagnosis. While their discovery in more advanced cases eliminates any doubt that may be entertained as to the nature of the disease, the most practical value of such examinations is to be found when they are made in the cases of patients whose condition is still hopeful if placed at once upon proper treatment. The practicability of this comparatively simple means to assist in making a diagnosis at a time when it may be of inestimable value has prompted me to present, in a form very largely of a review, some of the more recent methods of preserving and examining sputum for tubercle-bacilli.

It is scarcely necessary at this time to dwell upon the well-known method of making cover-glass preparations directly from the crude sputum, and the staining of the same by Ehrlich's, Neelsen's, Gibbes's, or other methods that are usually given in detail in modern works on bacteriology and pathologic histology. This method is very satisfactory, and it seems to have no superior in the great majority of cases in which such examinations are usually made, but in a large number of more doubtful cases in which examination is especially desired for its diagnostic value, the advisability of relying upon negative results obtained from cover-glass preparations made directly from the crude sputum has been questioned, on account of the small number of tubercle-bacilli present in the beginning of the invasion and the unevenness of their distribution

throughout the sputum. It is also a well-known fact that the method is primarily applicable only to a newly expectorated discharge, as the sputum, unless kept at a low temperature, very soon undergoes fermentation and putrefactive changes, which render it undesirable for examination, although the bacilli could still be detected if present in sufficient numbers.

In the beginning of the disease it is difficult and often impossible to detect the bacilli in a single specimen of sputum, especially if the usual method of making cover-glass preparations is employed. This necessitates the examination of a considerable number of preparations from each of several specimens taken at short intervals (the first expectorated on consecutive mornings is preferable), in order that the tubercle-bacilli, if present, may be detected or their absence assured. It must be borne in mind, however, that a large number of examinations with negative results does not positively affirm the absence of the disease.

In order to obviate the difficulties suggested and to increase the efficiency of sputum-examination, a few methods have been devised that, while not altogether new, appear not to have received the attention that their merits warrant. These, together with the well-known methods, appear to furnish means sufficient for every physician to secure the greatest possible assistance to be derived from such examinations. As the methods vary almost according to the necessity of the case, the process should be selected that is best adapted to afford the special information desired. The primary qualifications of the method to be chosen may be said to be those that will enable the examiner—

1. To discover the presence of tubercle-bacilli when they are present in very small numbers, as in the beginning of the invasion, as well as in larger numbers in more advanced stages of the disease.
2. To preserve the sputum without decomposition until examined, so that the examination need not be neglected on account of a necessary delay in its execution.
3. To determine, especially in the beginning of the disease, as approximately as possible the extent of the invasion, as indicated by the number of tubercle-bacilli present.

As already stated, cover-glass preparations, made directly from the sputum and stained according to some well-established method, give very satisfactory

¹ Read before the Washington Microscopical Society, Feb. 2, 1892.

results in nearly all of the more advanced cases. It is in the earlier stages of the disease that other methods are desired for preparing the sputum.

The staining process will not be given in connection with each of the methods of treating the sputum about to be mentioned, as any of the known methods can be employed, but subsequently a staining process will be described that is applicable to them all and which on account of its simplicity and efficiency I prefer to any of the other excellent methods with which I am familiar.

Biedert's method. The object of this method is to find the tubercle-bacilli when they are present in the sputum in small numbers. In 1886, Biedert⁽¹⁾ called attention to the fact that smearing the crude sputum on the cover-glass and staining the same does not give accurate results, so far as detecting the number of bacilli is concerned. This is due to the fact that clumps of sputum that usually contain a larger number of tubercle-bacilli than the more liquid portion are so deeply stained as to obliterate their presence. In order to reduce the sputum to a more homogeneous consistence and at the same time to concentrate into a small mass the bacilli in a large quantity of sputum, Biedert mixed the sputum with twice its volume of a 2 per cent. solution of caustic potash or soda (soda being preferred) and boiled the mixture until perfectly fluid, after which it was placed in a conical glass and allowed to stand until a sediment had formed. Upon decanting the supernatant liquid, tubercle-bacilli otherwise difficult or impossible to find were readily discovered in stained cover-glass preparations made from the sediment in the bottom of the vessel. In a recent article, ⁽²⁾ Biedert again dwells on the value of this method. Although the process requires considerable time, the advantage to be gained by concentrating the tubercle-bacilli in a large quantity of sputum into a small sediment is obvious. This is also a convenient method for preserving sputum for subsequent examinations, as the bacteria remain unchanged for a considerable time.

Among the various processes that have been proposed and which are based upon the principles set forth by Biedert, the following may be mentioned:

Kaatzner⁽³⁾ employed from a 1 to 3 per cent. solution of caustic soda or potash, which dissolved the cells, mucus, etc., but preserved the elastic fibers and bacteria. Cover-glass preparations were made from the sediment. He also employed a dilute solution of acetic acid to clear the preparations.

Kühne⁽⁴⁾ added an equal volume of a saturated aqueous solution of borax to the sputum in order to overcome its viscosity and to obtain a thin even layer on the cover-glass. This mixture remained good for several weeks. Putrefaction is prevented and the tubercle-bacilli continue to stain nicely.

He also used for less viscid sputum a concentrated aqueous solution of ammonium carbonate. Kühne also dwells upon the importance of estimating the number of tubercle-bacilli present.

Mühlhäuser⁽⁵⁾ does not advise the use of stronger solutions of caustic potash than 2 per cent. He differs from Biedert in taking a smaller quantity of the sputum and adding from six to eight times its volume of the potash solution.

Savelieff's method. The object of this process is to preserve the sputum until examined. In 1890, Savelieff⁽⁶⁾ suggested a very convenient method for preserving the sputum and examining it bacteriologically at a more or less remote date after its expectoration. It consists in having the patient expectorate in a dish containing 95 per cent. alcohol, in which medium the discharge can remain for several months. As the sputum is hardened in the alcohol (through dehydration and coagulation), Savelieff liquefies the coagulated sputum with a solution of caustic potash prior to making the cover-glass preparations. The technique employed was to remove a small lump of the coagulum, place it upon a slide and add a few drops of caustic potash solution which reduced the coagulum in a very few minutes to a more or less pasty consistency from which the preparations were made. After drying, they were rinsed in water, to remove the potash, and stained. The film was fixed by passing the cover-glass three times through the flame of an alcohol lamp or Bunsen burner. Thus prepared, the preparation was stained by some familiar method.

Determination of the number of tubercle-bacilli in the sputum. While the determination of the number of tubercle-bacilli in the sputum is of special interest in studying the progress of the disease during a course of treatment, its practical value from a diagnostic standpoint is of much less importance. Although the extent of invasion in the early stages of the disease may be approximately determined by the number of bacilli found, providing the estimation can be made sufficiently accurate, the important factor is to determine whether or not the parasite is present. Furthermore, the methods for determining simply the relative number of tubercle-bacilli in the sputum are either so crude as to be unreliable or so complicated as to be impracticable for the regular physician. Of the methods proposed only two will be mentioned, and these very briefly:

Nuttall⁽⁷⁾ has recently devised a method by which the total number of tubercle-bacilli in the sputum can be very accurately determined. It consists in collecting the sputum of twenty-four hours in a scrupulously clean dish, reducing it to a homogeneous consistence by treating it with a solution of potash; the accurate measurement of the total quantity and the making of cover-glass preparations

with a definite amount of the mixture that is determined by means of a specially prepared buret. For the details of this quite simple and excellent process the reader is referred to the original article. In one of the cases reported by Nuttall that was treated with Koch's lymph and from which he estimated the bacilli contained in the sputum on sixteen different days extending over the period from January 10th to March 1st he found the maximum number of tubercle-bacilli in the sputum of a single day to be 4,312,581,280; the minimum number was a little less than two billions.

In order to compare the number of tubercle-bacilli found in the sputum from day to day, Gaffky⁽⁵⁾ made the following classification, although he considered it impossible to even approximately estimate the number of bacilli. It is important to note that from each case he examined but one preparation each day. According to the number of bacilli found on the cover-glass he placed it in one of ten divisions into which he divided them:

	No. of bacilli.
1. On the whole cover-glass	1-4
2. On several fields an average of	1
3. On one field an average of	1
4. " " "	2-3
5. " " "	4-6
6. " " "	7-12
7. " " rather many.	
8. " " many.	
9. " " very many.	
10. " " an enormous number.	

It is evident that from a single preparation no trustworthy results could be obtained, on account of the variation in the thickness of the layer of sputum on the cover-glass and the unequal distribution of the tubercle-bacilli throughout the sputum. I have frequently found some preparations to contain few or no bacilli, while others made from the same specimen of sputum would contain a very large number.

My notes upon a considerable number of examinations show that frequently, when the total number of tubercle-bacilli found on several cover-glass preparations made from the same specimen of sputum averaged from 1 to 4, the symptoms were barely sufficient to cause a suspicion of the invasion. I have found on an average as many as from 100 to 200 and even more bacilli on every preparation examined from the same specimen of sputum from patients whose physicians supposed them to be suffering from uncomplicated bronchitis. Even a larger number have been found before the physical signs and symptoms were sufficiently developed to admit of a diagnosis of tuberculosis. While my observations have been quite limited and the cases from which the examinations were made may have been ex-

ceptional, yet the facts exist and furnish ample illustration of the importance of an early, careful, and thorough examination of the sputum.

Sectioning sputum. Savelieff's method suggested the possibility of hardening and sectioning the sputum. It seemed that by this process it would be possible to determine more accurately the relation of the tubercle-bacilli to the yellowish, more dense balls in the sputum than it is possible to do by means of cover-glass preparations. This method of treating sputum, however, I found had been anticipated by Schmidt⁽⁶⁾ in the study of the histologic structure of sputum from patients suffering from asthma. While engaged upon this subject, Gabritschewsky's⁽¹⁰⁾ article on the sectioning of sputum in the study of the so-called Buhl cells, alveolar epithelium and giant-cells and Aronson and Philip's⁽¹¹⁾ article on the sectioning of sputum and the exhibition of eosinophile cells in the same have appeared. Gabritschewsky found giant-cells in the sputum from three out of four patients suffering from pulmonary tuberculosis. The method, however, has not heretofore been employed in the examination of sputum for tubercle-bacilli.

The method used by Gabritschewsky is as follows: The more dense balls in the freshly expectorated sputum were placed in the hardening reagents for the usual period of time, after which they were imbedded in celloidin, sectioned, stained, and mounted the same as sections of ordinary tissue. The hardening fluids used were alcohol (beginning with the weak and increasing to the strong), Müller's fluid, Flemming's solution, chromic acid, picric acid, and corrosive sublimate solutions. The sections were stained with saffranin, alum-carmine, and hematoxylin-eosin. Alcohol for hardening and hematoxylin-eosin for staining were recommended. Schmidt imbedded the sputum in paraffin as well as in celloidin. Aronson and Philip hardened the sputum first in a corrosive sublimate solution.

In my experiments I have found that the sputum becomes so extremely brittle when hardened in alcohol that it can be handled without crumbling only with the utmost care. In order to eliminate this difficulty a paper cup, about one-third of an inch in diameter and from one-half to one inch long and perforated with pinholes, was made. This was filled with fresh sputum and placed immediately in alcohol (first 70, later 95 per cent.). After it had been in the alcohol for a few days it was imbedded in paraffin by the usual method, the paper being removed after the infiltration and just prior to the imbedding. By this means a cylinder of sputum about one-third of an inch in diameter was secured. Very thin sections were easily cut, fastened to cover-glasses and subsequently treated as sections of animal tissue. Owing to their fragility, care

must be exercised in fastening the sections to the cover-glass or slide, or portions will become detached during the staining process. Sections stained after Gabbet's process showed the tubercle-bacilli very beautifully lying singly or in clumps between the cell-elements. In the sections examined, the bacilli were usually found in aggregations of small clumps. Sputum hardened in alcohol showed the tubercle-bacilli much better than when Müller's fluid was used, although the latter exhibited the cell-elements more distinctly. The degenerated alveolar cells (Buhl's cells) are brought out more clearly when a little picric acid is added to the alcohol. This method, however, requires too much time to be practicable when the examination is made for its aid in diagnosis only, but for the study of the histologic elements of the sputum it offers many desirable features.

Gabbet's staining process.⁽¹²⁾ I have found this method to be very convenient and quite satisfactory in staining the tubercle-bacilli both in cover-glass preparations and in sections of tuberculous tissue. The stain is practically the same as that used in Ziehl-Neelsen's method, but the acid is combined with the methylene-blue solution, thus decolorizing and counter-staining at the same time. I have compared this method with those usually recommended and find that it gives equally as good results as the more lengthy processes. The formulæ for the solutions and the technique in their application are as follows:

(1) The stain—

Fuchsin,	1 gram.
Absolute alcohol,	10 cubic centimeters.
5 per cent. carbolic acid,	100 cubic centimeters.

(2) The decolorizer and counter-stain—

Methylene-blue,	2 grams.
25 per cent. sulphuric acid,	100 cubic centimeters.

For cover-glass preparations. After the smeared cover-glasses have dried in the air, they are passed film upward three times through a flame, after which the film is covered with the stain, which is allowed to act for about two minutes. The preparation is then rinsed in water and stained for one minute with the second solution, when it is again rinsed in water. It can be examined at once or allowed to dry, when it can be permanently mounted in balsam.

For sections, it is necessary to allow the reagents to act for a longer time. Better results may be obtained by heating the staining fluid until steam is given off. This is easily done by passing the preparation covered with the staining fluid several times through a flame, or heating the solution in a watch-glass upon which the cover floats film downward.

The tubercle-bacilli will appear upon a microscopic examination (an oil immersion lens is desirable) as slender, more or less curved, rod-shaped bodies of a deep-red color, while the surrounding tissue and other bacteria present are stained a more or less intense blue. There are occasionally small oval or round bodies found in preparations of sputum that retain the fuchsin stain and which beginners have frequently mistaken for tubercle-bacilli.

The solutions used in this method may be kept in stock for a long time (two to three years), but better results are obtained when moderately fresh solutions are employed. I would add that a 10 per cent. solution of sulphuric acid is quite as good and, I think, preferable to the stronger one recommended in the method.

CONCLUSIONS.

1. In all cases of bronchial or lung disturbances (not due to a known disease) that do not yield readily to treatment ordinarily successful, the sputum should be examined for tubercle-bacilli.

2. If tubercle-bacilli are not found in properly stained cover-glass preparations made directly from the sputum, Biedert's method or some modification of it should be employed to concentrate the bacilli in a large quantity of the sputum.

3. Several specimens of sputum should be thoroughly examined in all suspected cases before a negative conclusion is reached. In all such cases, an examination should be made from time to time, in order to detect the possible invasion of the bacilli at a later date.

4. In making the examination, fresh sputum should be employed, if possible. If a long delay is necessary, the sputum can be preserved in a 2 per cent. potash solution or in alcohol as previously described.

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VACCINATION.

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THE discovery of the prophylactic value of vaccination is certainly one of the most interesting and important chapters in the history of medical science. A century has now elapsed since Jenner promulgated to the world the results of investigations in which he had long been engaged. During this period the practice has extended to every quarter of the globe, and its beneficent effects are beyond calculation. It is, indeed, a remarkable fact that in a disease so distinctly infectious as smallpox, the causative microörganism of which still eludes identification, a substitution-process should so long ago have been detected whereby a mild infection takes the place of a severe and loathsome disorder. The immunity conferred by vaccination, though not permanent, is, while it lasts, almost as complete as that due to smallpox itself, a fact well illustrated by the statistics of the Royal Military Asylum, at Chelsea, England. During forty-eight years, 5774 boys were admitted to the institution. Of this number 1950, on admission, bore evidences of having suffered from variola, while 3824 either had vaccination-scars or were at once re-vaccinated. Of those that had already had the disease 6.15 per thousand, and of those protected by vaccination 7.06 per thousand, subsequently contracted smallpox during their residence in the Asylum. In other words, neither the immunity due to an attack of vaccinia nor that due to an attack of variola is always permanent. Per contra, a single vaccination may have a lifelong effect.

It is noteworthy that, notwithstanding the high development to which bacteriologic and bacterio-chemic studies have been carried, its most enlightened adherents have not as yet been able to devise prophylactic inoculation against scarlatina, typhoid fever, cerebro-spinal fever, croupous pneumonia, tuberculosis, or other dangerous infections.

The direct inoculation of variola, practised before the discovery of vaccination, was undoubtedly a step in advance, and decidedly reduced the gravity of the disease, including the disfigurement and blindness that it produced. Inoculation, however, was guilty of spreading the malady, while of inoculated cases 3 in 1000 terminated fatally. Death as a result of vaccination is almost unknown.

During the century, books and pamphlets have been issued from the press, and paper after paper has appeared in the journals upon the ever-interesting theme of vaccination. The progress of years seems

to have no effect in diminishing these publications, yet, singular to relate, two eminent pathologists have recently arisen to deny the efficacy of Jenner's discovery. Critical disquisitions, however, must fall to the ground beside the simple statement of a few bare facts. Epidemics are not such veritable scourges now as they were during the eighteenth century. Scarred and blinded visages are now rarely seen upon the streets of the largest and most densely crowded cities; then, they were objects of every-day observation. In the Municipal Hospital of Philadelphia there were admitted, in 1871, 390 unvaccinated patients, of whom 254, *i. e.*, 65.5 per cent., died. During the same year, the total number of vaccinated cases was 799, and of these but 128, or only 16 per cent., perished. For upward of thirty years not a case of smallpox developed among the nurses of the London Smallpox Hospital, all the attendants of which are required to be re-vaccinated upon entrance. Re-vaccination is compulsory in the Prussian army. In forty years' time, less than 100 men in the entire organization fell victims to variola. Instances like these could be multiplied indefinitely, but to what use? I allude to the subject at all only to deplore the circumstance that men occupying high positions as teachers of science should lend countenance to the opposition of blind and ignorant zealots. Cavils concerning the nature and relationship of cow-pox, cattle-plague, grease, sheep-pox, etc., can never invalidate the cardinal truth, that successful vaccination protects against smallpox. It is, therefore, legitimate to conclude that true vaccinia and variola depend upon one and the same virus. This belief accords with what has been learned of late years concerning the nature of infectious disease, and with the results of experiments that are constantly being prosecuted with a view to producing immunity by the inoculation or injection of attenuated virus. It is along these lines that we may fairly hope for extension of prophylactic medicine in the future. The labors of Pasteur, Bouchard, Koch, Brieger, Behring and Kitasato, Klemperer, and others, lead us to believe that eventually practical measures will be devised, by the aid of which we shall have it in our power to counteract the development of some of the most fatal infectious disorders to which mankind is subject.

The employment of humanized virus is now nearly obsolete in this country. Some practitioners still cling to its use, and claim that the crust is both more reliable and more rapid in its effects than either the liquid or the dried animal lymph. In reply it may be urged that the action of the crust is also more severe. It is the testimony of Dr. Henry A. Martin, of Boston, that in two years after the introduction of the Beaugency virus into the United States, at

least 400,000 re-vaccinations had been performed by use of lymph derived from that source. Yet of this large number of operations in not a single case had death ensued from erysipelas or post-vaccine variola. Local and constitutional reaction is generally more severe when humanized virus is employed. One advantage may be imputed to the rapid action of the humanized lymph, and that is its ability to overtake and counteract variolous infection even when the latter has been at work for two or three days. We may, therefore, take advantage of this quality by employing humanized lymph after an individual has been exposed to contagion.

On the contrary, the crust stands convicted of two serious drawbacks: it is liable to occasion septicemia or to transmit syphilis. Vaccine syphilis is generally thought to be due to the blood adherent to the scab, but practically blood is always adherent to or mingled with the crust. It is also probable that this material is capable of propagating scrofulo-tuberculosis.

Bovine lymph is free from these serious objections, and certainly is efficient in preventing contagion. It may be less active, but, in view of its superior safety, the operation may, when necessary, be repeated until it succeeds. The animal matter has been used in two forms—as a liquid enclosed in capillary tubes, or dried upon quills or ivory points. In neither form does the lymph remain stable for any considerable period, though, when dried, its virtues are generally preserved for a longer period than when kept in the fluid state. This, perhaps, is not an exact statement. Undoubtedly, an exposed fluid more rapidly deteriorates than a thin layer of dried lymph, but, on the other hand, the former is put up in hermetically sealed glass tubes, so that while these remain intact it may be preserved for a long time from any cause that might bring about decomposition. The tube once opened, however, the lymph is liable to soon spoil, especially during the hot weather so common in the summer in this country.

Provided that it has undergone no change, fluid possesses some advantage over dried lymph as regards its efficiency of application. The latter needs to be dissolved in warm water while the surface is being abraded. Now, if it be rendered too fluid it may escape from the point. On the other hand, it may not be sufficiently dissolved. In the former case, much of it may be lost, and in the latter it may not readily be absorbed, and if by some accident too much blood flows from the abraded or scarified surface, the lymph may be prevented from entering the system. Either of these contingencies may be the cause of a failure that is unjustly blamed upon the quality of the matter. Pure fluid lymph is, consequently, preferable to the dried variety in that

it is more easy of application. Either the scab or the incrustation upon points must be dissolved before it is used.

I have recently had placed in my hands for examination some specimens of a pure animal lymph, prepared by Dr. Pissin, State Councillor of Health, Berlin, at his Institute for Animal Vaccination, founded in 1865. So highly is it esteemed in the country of its origin, that it is exclusively employed as the material for vaccination and re-vaccination in the German army. It is obtained solely by calf-to-calf vaccination. The animals are subjected to rigid examination, and every possible source of impurity and contamination is carefully eliminated.

This lymph is put up in two forms. First, the *pure lymph*, which is a product of constant and unvarying activity, obtained directly from the calf. It should be used in a comparatively fresh condition, that is to say, within from four to six weeks after the date of preparation. This is a beautifully limpid fluid, almost as colorless as water, and is enclosed in hermetically sealed glass tubes. The *emulsified lymph* is prepared from the pure material by a special process. This preparation is a little thicker than the pure lymph, and is slightly turbid. It is equally effective, is far more stable, and retains its power for an indefinite period if the tubes are kept in a cool place. For many years, it is claimed, the results with Dr. Pissin's lymph have been 100 per cent. of successes in primary vaccinations, and from 80 to 90 per cent. in re-vaccinations. The materials are put up in tubes of different sizes, containing a sufficient quantity for five, ten, or twenty-five vaccinations.

The method in which it is used is as follows: The skin is cleansed with soap and water at the spot selected for the operation, and wiped quite dry. The extremities of the tube are then broken off, and a sufficient quantity of the lymph blown upon the skin, preferably upon four separate places. Then with a blunt lancet, or darning-needle, previously disinfected by passing through the flame of a spirit-lamp, the lymph is scratched in, care being taken not to abrade the epidermis, any effusion of blood being undesirable. The part should be allowed to dry before the clothing is readjusted, and should not be washed again for a week.

I have made use of both forms of this lymph, with entire success, and find that the claims made for it are borne out by my own experience. In every case the vaccine lesion was perfectly typical and unattended by any unusual local or constitutional phenomena. These tests exemplify not only the efficiency of the preparation, which is, of course, the chief point to be considered, but also incidentally the preservative influence of the sealed tubes—for the fine lymph, which is the least stable, did not

reach me until eight weeks after it had been received by the English agent, and it must have been at least a few days old when it first came into his possession. As regards fixity, therefore, it must be regarded as the equal if not the superior of lymph dried upon points. The emulsion that I employed was a fresher sample, being about two weeks old. Both varieties were entirely efficient.

The observations of several friends, to whom I distributed specimens of the lymph, corresponded precisely with my own, and we can therefore corroborate the favorable reports of foreign vaccinators regarding the preparation. I see but one objection to the article, and that simply concerns its mode of application, not its virtue. There is likely to be a waste of the fluid in the act of blowing, and some difficulty in effectually resealing the tubes.

THE INFLUENCE OF THE DOCTRINE OF CONTAGION UPON THE DEATH-RATE FROM TUBERCULOSIS IN THE CITY OF PHILADELPHIA.

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SINCE the discovery of the bacillus tuberculosis by Koch in 1882, the theory of the contagiousness of tuberculosis has more or less attracted the attention of the civilized world—not that the question involved was a new one, for it had been debated and re-debated both by the medical profession and by governments for centuries. It was, however, being approached in a new way, and it was the conclusiveness of the new evidence more than the question itself that arrested attention.

Thanks to the daily newspapers and the intelligence of the people, the practical measures that logically have grown out of the adoption of the theory are daily finding more advocates in the city of Philadelphia. During the first few years that followed immediately upon Koch's discovery, the medical profession stood out almost to a man against the theory. Now, however, the profession is nearly unanimous in its favor, and everywhere preventive measures are being introduced upon the suggestion of medical practitioners.

What has been the result of this propagation of the theory of the contagiousness of tuberculosis and of the partial and imperfect effort at prevention? If tuberculosis is contagious, we ought to have some result from even this little effort.

We have in the city of Philadelphia a record of mortality statistics from the year 1861 to the present time. In the accompanying table I give the population, the general mortality, the mortality-rate per 1000 living people, the mortality and the mortality-rate per 1000 living people from pulmonary tuberculosis for each year since 1861. It will be

seen from this table that during the thirty years from 1861 to 1891 there was no real and continuous reduction in the mortality-rate from pulmonary tuberculosis until 1885,¹ and that since that time there has been a gradual and continuous reduction. The importance of this reduction will be emphasized, too, when we bear in mind that during the last three years of this time we have had an epidemic of influenza, which materially increased the mortality from pulmonary tuberculosis.

MORTALITY OF PHILADELPHIA.

Year.	Population.	Deaths.	Deaths to 1000 living.	Deaths from pulmonary tuberculosis.	Deaths from pulmonary tuberculosis to 1000 living
1861	576,408	13,540	23.49	1,817	3.152
1862	587,287	13,864	23.60	1,949	3.318
1863	598,166	14,220	23.73	1,955	3.268
1864	608,045	15,875	26.10	2,089	3.435
1865	618,924	15,633	25.25	2,026	3.370
1866	630,803	15,362	22.80	1,944	3.081
1867	640,682	12,660	19.76	1,947	3.038
1868	651,561	13,391	20.39	1,995	3.061
1869	662,440	13,428	20.27	1,975	2.981
1870	674,022	15,317	22.72	2,308	3.424
1871	700,000	15,485	22.12	2,337	3.195
1872	725,000	18,987	21.19	2,330	3.213
1873	750,000	15,224	20.29	2,291	3.054
1874	775,000	15,238	19.66	2,304	3.118
1875	800,000	17,805	22.25	2,359	2.948
1876	825,594	18,892	22.88	2,676	3.241
1877	850,856	16,004	18.81	2,349	2.760
1878	876,118	15,743	17.97	2,491	2.843
1879	901,380	15,473	17.17	2,481	2.741
1880	846,980	17,711	20.91	2,692	3.178
1881	868,000	19,515	22.48	2,768	3.188
1882	886,539	20,059	22.62	2,809	3.168
1883	907,041	20,076	22.13	2,798	3.084
1884	927,995	19,999	21.55	2,801	3.018
1885	949,432	21,392	22.53	2,821	2.971
1886	971,363	20,005	20.59	2,834	2.927
1887	993,801	21,719	21.85	2,800	2.817
1888	1,016,758	20,372	20.04	2,695	2.650
1889	1,040,245	20,536	19.74	2,532	2.434
1890	1,046,964	21,732	20.76	2,764	2.640
1891	1,069,264	23,367	21.85	2,624	2.454

If we divide the thirty years into decades, and carefully study the population and the mortality-rate from pulmonary tuberculosis side by side, we will be able to note the following interesting facts. The mortality-rate from pulmonary tuberculosis rises and falls at intervals during each decade, but much more markedly so during the first and second than during the third. This phenomenon is partly due to mistakes in the estimates in population, as will be seen by a scrutiny of the population-column, and is partly incidental to tuberculosis, as shown in my paper on the "Contagiousness of Phthisis."²

During the first decade the estimates of population are nearly correct, and we have the natural rise and fall in the mortality-rate well illustrated. During

¹ The slight reduction between 1881 and 1885 is probably mainly due to the natural rise and fall in the mortality of the disease.

² Transactions of the Medical Society of the State of Pennsylvania, 1888.

the second decade the estimates in population are very much too high, and as each year has not only the over-estimate of population but also the accumulated excess of the preceding years, the mortality-rate becomes progressively vitiated during this decade. It will be seen, however, that the general appearance of the mortality-rate from tuberculosis during this decade is about the same as that of the preceding, registering the same rises and falls. Were the estimated population correct, it would show almost identically the same figures, as will be seen by referring to the column giving the gross number of deaths from pulmonary tuberculosis. During the third decade the estimates in population are likewise a trifle too high, which is to be borne in mind in studying the mortality-rate; but even allowing for this, it will be seen that the rate for the decade differs materially from that of the preceding two. There is but a single rise and there is a gradual and permanent reduction.

In the first and second decades the variation in the mortality-rate is really a rise above the starting-point, and a drop back to it, whilst in the third decade there is a gradual and continuous decline. In 1861, the mortality rate was 3.152; in 1871 it was 3.195; in 1881, it was 3.188, whilst in 1891 it was 2.454. During the decade between 1861 and 1871, the rate dropped below 3 per 1000 only once, namely in 1869, when it was 2.981. This reduction was in part due to a slightly exaggerated population, in part to the generally low mortality-rate from all diseases for the year, and in part no doubt to the natural variation in the mortality from the disease. During the decade between 1871 and 1881 the rate dropped below 3 per 1000—in 1875, when it was 2.948; in 1877, when it was 2.760; in 1878, when it was 2.843; and in 1879, when it was 2.741. During all these years, the apparently lower rate was really due to an over-estimate of the population, as will be shown by a careful study of the population-column and the column giving the gross number of deaths from pulmonary tuberculosis. The census returns for 1880 make the population nearly 60,000 below the estimated population for 1879, and the gross returns from pulmonary tuberculosis during the decade show a constant increase from 1871 to 1881. Were the mortality-rates for the years during this decade computed on the basis of the correct population, it would probably at no time go below 3 per 1000. During the decade between 1881 and 1891, there is a gradual diminution from 3.188 in 1881 to 2.454 in 1891. It will be seen that there is a reduction every year except during the year 1890, when there is a slight increase. The increase for this year is partly due to over-estimated population during the preceding years, and partly due to influenza.

If we study the mortality-rates from pulmonary tuberculosis side by side with the number of deaths from the disease and the population for the thirty years as a whole, we shall see that during the entire period there has been no material decrease in the death-rate from pulmonary tuberculosis until the last few years, and that the decrease becomes more rapid as we approach the present year. The actual decrease from 1881 to 1891 is 0.734 per 1000 of living people, which with our present population means a saving of 784 lives a year.

To what can this most fortunate reduction in our mortality from pulmonary tuberculosis be ascribed? Upon the theory that the disease is contagious, it is easily understood, and upon no other can it be explained. Since the question of the contagiousness of tuberculosis has been discussed in the newspapers, most people, even though they may not have believed in the contagiousness, have adopted preventive measures. The majority of physicians have, moreover, during recent years strongly urged preventive measures when attending persons suffering from the disease. The effect of these efforts is showing itself in a reduced mortality-rate. That so excellent a result should follow such trifling efforts is in accordance with what we know about the preventability of tuberculosis. Owing to the fact that the contagion is necessarily confined to the pus given off from a tuberculous ulcer or broken-down nodule, tuberculosis is of all diseases the most easily preventable. All that is necessary is to confine and destroy this pus, and the most intimate relations between sick and well can be safely maintained.

736 PINE STREET

THREE FATAL CASES OF CEREBRO-SPINAL MENINGITIS, WITH AUTOPSIES.

BY HERMAN B. ALLYN, M.D.,
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I DESIRE to report these three cases because they occurred immediately following a widespread epidemic of influenza, in which cerebro-spinal symptoms were among the most characteristic features of the disease. At such a time, the possibility of mistaking the graver for the milder affection is much more likely to occur, especially when one is not on his guard. These cases may, therefore, serve a useful purpose in the way of warning.

The first patient was a man, forty years old, married, and engaged in running coal-cars at Greenwich Point. After working for twenty-nine consecutive days, he awoke, on the morning of February 1st, with a headache, which became worse, and after breakfast he was suddenly seized with severe pain in his right ankle. He went to Greenwich Point to get excused for the day, and on his way home—a long walk being necessary—he became so weak in

his legs and feet that he fell down. He lay on the ground for three hours, unable to rise, and vomiting profusely, and was possibly unconscious part of the time. A passing driver roused him, and, between driving and walking, he managed at last to get home in an extremely prostrated condition. He complained of pains in his knees, ankles, back, and head—pain in the latter being most intense. He was delirious during Monday night; and between three and four o'clock the next morning became unconscious, with rigid limbs and clenched teeth. This comatose condition lasted several hours and then gave place to delirium, from which the patient was never afterward wholly free.

In addition to the local pains he had general hyperesthesia. For a few nights the delirium was maniacal, the patient fighting with his attendants and jumping out of bed. Insomnia was persistent.

On Friday, an herpetic eruption appeared on the lower lip, and on the right wrist there were some forty or fifty papules, which subsequently became pustules, and then dried up. The wrist was stiff, tender, and somewhat swollen. The fever was moderate, the pulse under 90, and the respiration about 20. There was marked tenderness along the spine, especially in the lumbar region and at the nape of the neck. There was never any opisthotonos, retraction of the head, or convulsions. The lungs and heart were free from disease. Constipation was obstinate. The urine contained the merest trace of albumin and no casts. The conjunctivæ were injected.

Gradually a typical ataxic typhoid condition developed, the temperature rose, the pulse and respiration became more frequent, delirium was persistent, and it was increasingly difficult to feed him.

On February 18, he was completely comatose, with very high fever and moist skin; pulse, 160; respiration, 64. He died after an illness of eighteen days.

The autopsy was held the same evening by Dr. Jameson, assisted by Dr. W. S. Carter and myself. The heart, lungs, liver, spleen, and intestines presented nothing abnormal. There was only one kidney, and that was the seat of acute and chronic nephritis.

The brain itself appeared normal, except for some softening. The lymph-spaces of the pia were distended, and the arachnoid and pia injected. At the base, particularly surrounding the medulla, the arachnoid and pia were inflamed, the pia being adherent to the medulla, pons, and cerebellum and to the upper portion of the cord. A small quantity of lymph was found, particularly around the circle of Willis and the anterior perforated space. The blood was fluid. No cultures were attempted.

The second patient was a healthy man, twenty-eight years old, who was called in to care for the first patient at night. After several days of this watching, on February 5th, he complained at dinner of having pain in his back. He then went out into the back yard and while there fainted. He regained consciousness, and went upstairs to bed, complaining of being cold and of intense headache, backache, and pains "all over." The pain

in the head was agonizing. Explosive vomiting occurred twice. Delirium was sportive and jocular in type. He sang a comic song, got out of bed to obtain a glass of cold water, poured it over his head, and, after making an intelligent reply to a question, was supposed to be sleeping quietly. He was found dead at twenty minutes past four, his illness having lasted about three days.

In a very short time after death, the back, from the shoulders to the buttocks, was purple from effused blood. Rigor mortis set in very early.

The autopsy was held on the following day by Dr. T. J. Ellinger, assisted by myself. Only the brain and cord were examined.

The dura mater was adherent, though not tightly, to the skull. The pia was everywhere adherent to the brain. From about the anterior temporal convolutions posteriorly the lymph-spaces in the pia were much distended with yellow lymph. The injection of the pia and arachnoid gave the brain a bright-red appearance, contrasting strongly with the empty blue veins. The brain itself was anemic. The blood wherever found was black and fluid. The inflammatory adhesions were especially well marked at the base, over the medulla and pons.

The spinal canal was full of black, fluid blood; the upper portion of the cord was much softened. The spinal dura had to be stripped from the walls of the canal. There were some flakes of lymph upon the membranes. Gelatin test-tubes were inoculated with the lymph.

The third patient was a sister of the first patient. She was forty-eight years old. There had been, as far as could be ascertained, no communication between sister and brother. She went to bed on the night of March 6th apparently perfectly well, except that she complained slightly of pains in her joints. She had eaten very heartily of turkey. During the night she was seized with a chill, with vomiting and purging, but no one knew of her illness until about five o'clock the next morning. I saw her first about 4 P.M., March 7th. Vomiting and purging had ceased; she was extremely weak, with cold skin and feeble, frequent pulse. The conjunctivæ were injected and the pupils contracted. The patient had no pain, except in the forehead. She continued conscious and quiet until twelve o'clock midnight, when she became comatose; pulse, 160; respiration, 40. She died in the same condition at 2.45 A.M., her illness having lasted about twenty-four hours.

The autopsy was made by the Coroner's physician the same evening. All the organs were soft and friable, with acute parenchymatous degeneration. The stomach and intestines showed marked inflammation. The mucous membrane was inflamed and softened and appeared rough, as though stripped of its epithelium. The dura was moderately adherent to the skull. The pia and arachnoid were thickened, and the outer surface had a gelatinous appearance, that next to the brain being much injected, but not adherent to the brain over the cortex. The lymph-spaces were full, the veins empty. There was an unusual amount of fluid in the brain, and the brain itself was much softened. At the base,

the same lesions were found as in the other cases, but were not so marked.

It is remarkable that these three cases occurred practically in one family, and that all of the patients were adults. The first case progressed gradually to a fatal issue, lasting eighteen days. The second was fulminating, lasting only three days. The third presented all the symptoms of acute toxic gastro-enteritis, with collapse and death. It would not have been regarded as a case of meningitis but for the findings at the autopsy.

The diagnosis from influenza, with which cerebro-spinal meningitis was most likely to be confounded, can be made in most cases by noting the occurrence, at the onset of the disease, of chill, vomiting, and faintness, accompanied or followed immediately by headache and backache, the headache being more frequently occipital than is the headache of influenza. Subsequently there are hyperesthesia of the skin, stiffness and tenderness of the muscles of the neck, injected conjunctivæ, delirium, and frequently convulsions. Eruptions, most frequently herpetic or petechial, are absent as often present. The occurrence of other cases of the same kind stamps the disease as epidemic cerebro-spinal meningitis. Coma sometimes alternates with delirium and usually succeeds it in lingering fatal cases.

The ages of the patients probably account for the absence of convulsions.

ORIGINAL ADDRESS.

REMARKS ON SPECIALISM.

Made at the fourth annual meeting of the American Pediatric Society, Boston, May 2, 1892.

BY WILLIAM OSLER, M.D.,

PROFESSOR OF MEDICINE IN THE JOHNS HOPKINS UNIVERSITY,
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GENTLEMEN: First let me express my gratitude for your kindness in conferring upon me the honor of your presidency—an honor enhanced by the standing and character of the men who have previously occupied this chair. To have selected as your presiding officer one whose work has lain in the wide field of general medicine, is an indication that you duly appreciate the relation of the special subject in which we are now interested, and to which this Society is devoted. The diseases incident to infancy and childhood are so varied, covering every department of internal medicine, as well as of surgery, that the broad distinctions emphasized by the names physician and surgeon suffice to characterize us, and happily we have not yet been stamped with a distinctive appellation, under which so many of our colleagues in other lines labor. In the extraordinary development of modern medicine, some limitation in work is inevitable, and although as practitioners and teachers we are all, to some degree, necessarily interested in the diseases of children, there are among us those who find

in such diseases their chief occupation, and our Society is but an organized expression of a natural desire to unite for the purposes of study.

On an occasion of this kind it seems best to me not to discuss any particular subject in children's diseases, as such discussion is almost certain to come up subsequently in our meetings, but to deal with some problem of general interest, with bearings, however, upon our organization. In comparison with the older countries of Europe, specialism may truly be said to be the most distinctive feature in the medical profession of America; and it may not be inappropriate to consider here a few of its advantages and disadvantages.

"That which has been is that which shall be." Medicine may be said to have begun with specialists. The Ebers Papyrus is largely taken up with the consideration of local diseases; and centuries later we find in Greece certain individuals treating special ailments, and Aristophanes satirizes a "rectum specialist" in a way not unlike our comic journals would "poke fun" at an oculist or an aurist. The tail of our emblematic snake has returned into his mouth: at no age has specialism been so rife. To follow its gradual development during the present century would take more time than is at my disposal, and would not be a profitable task. The rapid increase of knowledge has made concentration in work a necessity; specialism is here, and here to stay.

The advantages to the profession that have followed this differentiation have nowhere been more striking than in this country, and the earnest workers in ophthalmology, gynecology, dermatology, and other branches have contributed largely to inculcate the idea of *thoroughness*, the necessity for which is likely to be lost sight of in the hurry and bustle incident to the growth of a nation. Better work is done all along the line; a shallow diffuseness has given place to the clearness and definiteness that comes from accurate study in a limited field. The day has gone by for Admirable Crichtons, and although we have in our ranks a few notable illustrations of men that have become distinguished authorities in eye and skin diseases, and upon syphilis, without sacrificing their interests in general surgery, such are necessarily rare, and unfortunately, from the very circumstances of the case likely to become more uncommon. Then, how comforting to the general practitioner is the wise counsel of the specialist. We take him a case that has puzzled and annoyed us, the diagnosis of which is uncertain, and we consult in vain the unwritten records of our experience and the printed records of our books. He labels it in a few minutes as a coleopterist would a beetle, and we feel grateful for the accuracy of his information and happy in the possession of the label; and if sometimes, standing like Aaron between life and death, he illumines too brightly the darkness of our ignorance, are we not as often beholden to him for gentle dealing?

It is almost unnecessary to remark that the public in which we live and move has not been slow to recognize the advantage of a division of labor in the field of medicine. The desire for expert knowledge is, however, now so general that there is a grave danger lest the family physician should become, in some places, a relic of the past. It must indeed be a comfort to thousands

to feel that in the serious emergencies of life expert skill is so freely available. Perhaps, as specialists, no class in our profession has been more roundly abused for meddlesome work than the gynecologists, and yet what shall not be forgiven to the men that, as a direct outcome of the very operative details that have received the bitterest criticism, have learned to recognize tubal gestation, and are to-day saving lives that otherwise would inevitably have been lost? I have known Formad to show in one year, at the Philadelphia Pathological Society, ten or twelve examples of ruptured tubal pregnancy obtained in medico-legal work (sudden death) in that city. The benefits the public reaps from specialism may be gathered from the fact that in a not much longer period of time I have seen seven specimens of tubal gestation, not removed by the pathologist, but by the gynecologist, with the saving of five lives. The conservatism that branded ovariectomists as butchers and belly-rippers is not yet dead among us, and I say it frankly, to our shame, that it has not always been professional encouragement that has supported daring advances on special lines. Humanity owes a great debt of gratitude to the devoted men that have striven during the past half-century for exactness in knowledge and for the practical application in all departments, a debt too great to pay, too great, one sometimes feels, even to acknowledge.

Specialism is not, however, without disadvantages. A radical error at the outset is the failure to recognize that the results of specialized observation are, at best, only partial truths that require to be correlated with facts obtained by wider study. The various organs, the diseases of which are subdivided for treatment, are not isolated, but complex parts of a complex whole, and every day's experience brings home the truth of the saying: "When one member suffers, all the members suffer with it." Plato must have discussed this very question with his bright friends in the profession—Eryximachus, perhaps—or he could never have put the following words into the mouth of Socrates: "I dare say that you may have heard eminent physicians say to a patient who comes to them with bad eyes, that they cannot cure his eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone, and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you ever observe that this is what they say?"¹ A paragraph that embodies the law and the gospel for specialists.

A serious danger is the attempt to manufacture rapidly a highly complex structure from ill-seasoned material. The more speedy success that often comes from the cultivation of a specialty is a strong incentive to young men to adopt early a particular line of work. How infrequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance that only ignorance can give, announces that he intends to be a gynecologist or an oculist. No more dangerous members of our profession exist than those born in it, so to speak,

as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eyes of colleagues defects that too often require the arts of the charlatan to hide from the public.

In the cultivation of a specialty as an *art* there is a tendency to develop a narrow and pedantic spirit; and the man that, year in and year out, examines eyes, palpates ovaries, or tunnels urethræ, without regard to the wider influence upon which his art rests, is likely, insensibly perhaps, but none the less surely, to acquire the attitude of mind of the old Scotch shoemaker, who, in response to the Dominie's suggestions about the weightier matters of life, asked "D'ye ken leather?" There is not a single department of which the study does not carry with it the correction of this most lamentable tendency. Problems in physiology and pathology touch at every point the commonest affections, and exercised in these, if only in the early years of professional life, the man is chastened, so to speak, and can never, even in the daily round of a most exacting practice, degenerate into a money-making machine. And let the younger of my hearers lay this to heart: Scan the lives of say twenty of the men most prominent in special lines of medicine and surgery to-day in this country, and you will find, with scarcely an exception, the early years devoted to anatomic, physiologic, or pathologic studies. They rose high because the foundations were deep. The most distinguished oculists have been trained in physiology and pathology, and some, like Sir William Bowman, have had reputations so preëminent in several departments that the identity of the physiologist has been lost in the ophthalmologist.

The work of the specialist encroaches more and more upon that of the general practitioner, and this condition, though in many ways to be regretted, is not likely to be changed. I have known the head of a household pay in the course of a year for the professional services of six physicians, a gynecologist, an oculist, a laryngologist, a dermatologist, and a surgeon. What remained after this partition of the great practitioner came in sixth and looked after the children. It is interesting to note that to this one pertains, to a large extent, the functions of the old family physician, and further advice is usually sought through him, or at his suggestion. In the evolution of the specialist the "children's doctor" is the last to appear, not because of any extreme differentiation, but he represents a vestigial remnant of what was formerly in cities the general practitioner. May I not say that there are members of our Society whose interest in their work is largely due to this new feature in domestic life? In the division of the household among our brethren, the children alone remain, and fortunately their ailments are too diversified to allow of much specialization.

After all, though specialism is rife and has so carved the body of physic that Hippocrates would scarcely recognize it, and though its sounds go out loudly and echo in the journal and society reports, nevertheless I would boldly make claim for a wider diffusion of its benefits. Of dwellers in cities arrogance is a special trait, and we discuss problems in a surely-we-are-the-people style, forgetting that outside lie the greater

¹ Charmides: Jowett's translation.

millions equally precious to Æsculapius, and under the care of men that cannot specialize, who must be able to set fractures, perform version, treat iritis as well as fevers, ear-ache as well as itch. What of the benefits of specialism to this larger class from the ranks of which the cities are replenished and the health of which is so essential to the nation? The out-door departments of the hospital and consulting rooms of the city physicians tell of the necessity of special knowledge to these people, particularly in emergencies and in the grave and more unusual forms of disease; but those that can thus avail themselves form but a fraction of the number that require technical skill for the purpose of diagnosis or treatment. Very little additional knowledge enables the general practitioner to grapple with a large proportion of the cases that in cities come under the care of the specialist. The question resolves itself into one of education. It is impossible in three collegiate sessions to bring men beyond the superficial routine, but in a more prolonged period of study—as I know from experience—the student can be taught practically in the wards and in the dispensary enough of the technique of the specialist to give at least a foundation upon which to work. He should leave the schools knowing the practical application of the microscope, the ophthalmoscope, and the laryngoscope, and in these and other lines he should have proceeded to the stage in which he recognizes the limitations of his knowledge. Such a man in general practice should know a "choked disc" when he sees it; the examination for tube-casts should be a familiar everyday task; and he should be able to tell whether a vocal band is paralyzed or not. A serious obstacle to this happy consummation—which can be reached in a well-ordered system of education—is the absence, in the early years of practice, of material upon which to freshen the memory and to "keep the hand in"; but the man that once, as a student, has reached a certain point always retains some measure of the old facility. The post-graduate schools have done much to enable men to revive and to acquire technical skill, and have been of great service in generalizing special knowledge. In the practice of a good all-round man, the number of cases demanding the help of a specialist is, after all, not very great. The ordinary run of nervous disorders should be recognized; adenoid vegetations should be treated with the skill of the laryngologist; he should know enough not to tinker with a case of glaucoma; and though he may not differentiate a pus tube from tubal pregnancy, he should in this, as in other details, have learned to know his limits and be ready to seek advice.

With the revival and extension of education, the benefits of specialism will become more widely diffused, and to this end the efforts of colleges and hospitals should be directed.

The organization of societies for the study of particular diseases has of late been a very noticeable feature in the professional life of this country. Since the foundation of the Ophthalmological Society more than a dozen associations have been formed, and their union in a triennial congress has proved a remarkable success. These societies stimulate work, promote good-fellowship, and materially aid in maintaining the standard of professional scholarship. They are, as a rule, exclusive

bodies, limited in membership, and demanding for admission evidence of special fitness. This point is sometimes urged against them, but the members exercise no arbitrary privilege in asking of candidates familiarity with the subject and evidence of ability to contribute to the general store of knowledge. In some of the specialties these societies have been most useful in disciplining men that have traduced, not the written code but the unwritten traditions of our craft, acting as if they were venders of wares to be hawked in the market-places.

Our own Society may be regarded as the outcome of a notable revival, during the past few years, of interest in the study of the diseases of children. The existence of a special journal devoted to pediatrics and the successful issue of a large cyclopedia of the *Diseases of Children*, testify to the appreciation on the part of the profession of the necessity for more accurate study of this branch. The Society offers to men who are working in, and teaching pediatrics, an opportunity of knowing each other, of discussing subjects of common interest, and through the medium of their publications making general the more special details of value in practice.

The program before you indicates clearly that we are all workers in general medicine; and may the characters of the papers and the discussions be the best justification of the existence of an organization devoted to the study of a particular section of that field.

ORIGINAL LECTURE.

NON-FATAL LACERATION OF THE SPINAL CORD —INTRA-DURAL HEMORRHAGE, WITH UNDISCOVERED COMPRESSION.

Delivered at the Buffalo General Hospital, Surgical Clinic.

BY ROSWELL PARK, M.D.

ON March 2d, a portion of the Niagara Falls tunnel caved in, and two men were killed by the falling débris. A third man was struck in the dorsal region by a beam, had the right humerus fractured in two places, and was bruised about the face and body. His lower limbs were found to be paralyzed and without sensation. He was sent by train to the Buffalo General Hospital and examined by Dr. Parmenter, who found a depression in the course of the spinal column, indicating either fracture or dislocation. On gentle manipulation crepitus was elicited, showing that there was at least fracture, if not also dislocation of the vertebræ. The injury to the cord must have been at about the level of the tenth or eleventh dorsal vertebra. Sensation was preserved to a line just above the pubes in front, passing near the anterior superior iliac spines at the sides, the limitation of sensibility corresponding to the course of the spinal nerves.

Obviously, without operation it could not be determined whether the cord was simply compressed or also lacerated. I, therefore, cut down over the line of the lower dorsal and upper lumbar vertebræ. Almost as soon as the knife passed through the skin, at least as soon as the fascia was penetrated, it was evident that the tissues were greatly lacerated, and lying upon the

bone I found a piece of spinal cord. This put almost a hopeless aspect on the case, but I thought it best to continue the exploration, and entered the spinal canal by removing the arches of the tenth, eleventh, and twelfth dorsal vertebrae, finding the canal—which in this situation is about the size of my little finger—filled with shreds of spinal cord and blood. There was still a portion of the cord apparently intact. After removing the projecting bone and other sources of irritation and compression, the wound was closed and dressed antiseptically. Judging from the mass of *débris* of the cord and clots found, the violence must have been extreme, and as only one spinous process was driven in, the traumatism must have been inflicted by the corner of a beam.

The man's temperature, three days after the injury, is only a little above 99°. He has had no disturbance following the operation. His paralysis is neither greater nor less than before. If septic meningitis were to ensue, I should expect it to-day, and as there are no signs of it, I infer that he will escape that danger. If so, he will probably get well after a fashion, but it will be a matter of extreme interest to note what reparative changes, if any, occur in the cord. The patient and his friends say that they would rather have him die than live in his present condition. The prognosis, as far as recovery of the functions of the cord is concerned, must necessarily be as unfavorable as possible.

(The patient subsequently made a good recovery, so far as the operation was concerned, the wound healing by first intention under one dressing. The only incident was a slight cystitis. The line of anesthesia descended a little, but otherwise the paraplegia remained unaltered.)

The second patient, thirty-seven years old, presents well-marked kyphotic curvature of the spine in the upper dorsal region, as the result of Pott's disease, the activity of which subsided many years ago, and which may be regarded as cured by ankylosis of the vertebrae. Otherwise he was in good health until March 18, 1892, when he was struck by a train and bruised about the back. The ambulance was immediately summoned. On its arrival, the patient was found to be but partially paralyzed, but within an hour he became completely so. The case is not yet twenty-four hours old, and now, upon examination, it will be seen that there is complete motor paralysis below the waist, and apparently complete loss of sensation. On careful examination, however, it appears that the anesthesia is simply cutaneous and that the patient has not lost the muscular sense. For instance, he cannot tell when the right foot is touched, but when it is firmly flexed or extended he is conscious of the movement. The muscular sense is less impaired on the right than on the left side. Tracing the line of cutaneous anesthesia, the evidence points to a lesion at about the level of the eleventh dorsal vertebra. We have to distinguish between fracture of the vertebrae, with compression of the spinal cord at this level, and an intra-spinal hemorrhage. The diagnosis is made mainly by relying on the history of accident and that which the ambulance-surgeon gives us. We are told positively that paralysis was not complete when the ambulance arrived, some twenty or thirty minutes after the accident, but that it became so within an hour afterward. This statement would seem suscep-

tible of but one explanation, namely, that of hemorrhage, with the formation of a clot gradually increasing in size, and pressing more and more upon the cord. Whether this clot is extra-dural or intra-dural, or due to a lesion of the cord proper, it is impossible to say. The evidence, however, points to pressure upon the cord at the level indicated, and the patient has willingly assented to an endeavor to afford relief. Accordingly, I purpose performing laminectomy, or as it is sometimes called, trephining the spine—in other words, cutting down upon the spinal column, exposing the spinal canal, and probably opening the dura and examining the cord itself.

The patient being anesthetized, a long incision is made and the muscles on either side of the spinous processes of the ninth, tenth, eleventh, and twelfth dorsal vertebrae are separated and retracted, so as to expose in a measure the posterior surface of the spinal column. The spinous processes are removed with stout cutting-forceps, and the laminae are divided with the forceps and chisel, until the spinal canal is open for a distance of six or seven centimeters. You will remember that there is a plexus of veins between the bony canal and the dura, and if the hemorrhage were extra-dural, we should expect to find here evidence in the shape of blood-clot. Little or nothing of this is apparent, and I shall next open the dura. The dura is opened by raising it at one point with a tenaculum, dividing it with a sharp-pointed knife, and slitting the membrane with a blunt bistoury. At the point where I raise the dura, it seems darker in color and gives the appearance of a dark mass seen through a nearly opaque membrane, although under the finger the sensation is not distinctive. Upon opening the dura, it is seen that there is a considerable quantity of effused blood, and upon clearing this away, the integrity of the cord itself does not seem materially impaired. Evidently, then, the diagnosis of hemorrhage was correct, and upon the removal of this laminated clot, we afford the patient a chance for recovery, of which he would otherwise have been deprived. If, now, there be no other lesion, and if no septic or other accident occur, we may regard his future as hopeful. In this instance I shall not close the dura carefully, but place only one or two stitches and trust further repair to natural processes. I do this for two reasons: First, because of the length of the procedure, since at this depth and working within narrow confines, an accurate closure would be most difficult and time-consuming, and unless the opening be accurately closed to prevent leakage there is no particular object in closing it at all. My second reason is that experience has taught me that the dura heals just about as well when not sutured as if it were sutured.

One other point about this patient I have not mentioned, namely, that from the time of the accident he has had bloody expectoration, and now, on physical examination there is found a limited area of dulness over the right lung. I do not detect crepitus, as from a broken rib, but, nevertheless, I cannot forget that some injury either to rib or lung, or both, may complicate the case in a most undesirable way. The extensive superficial wound is closed with two tiers of buried sutures of catgut and one superficial layer through the skin. Over this a carefully applied aseptic dressing is laid.

The patient lived about a week. The wound healed without complication, but the patient's paralytic condition was in nowise improved; his lung-trouble increased somewhat in extent, and he died apparently from marasmus and weakness as much as from any appreciable cause. On autopsy it was found that there had been no fracture and no serious injury to the cord at the level of the operation, but at a higher level, at the point of angular deformity to which attention was called, there had been fracture and displacement, with compression of the cord. There were no evidences of septic meningitis. During life there had been nothing, either in the way of tenderness or alteration in contour, to call attention to this higher lesion in the spine, and certainly a study of the nervous distribution of the paralyzed and non-paralyzed parts gave no indication that the primary cause of the paralysis was located here. Attention is called to this case as illustrating an unusual complication in spinal injuries, and as possibly pointing out a clear indication for operations in the future.

CLINICAL MEMORANDA.

CHOREA; ENDOCARDITIS; DEATH.¹

BY H. K. AIKEN, M.D.,
OF LAURENS, S. C.

THE following case is reported as affording some additional evidence upon the association of chorea with a rheumatic diathesis, and also as an illustration of the hereditary transmission of rheumatoid tendencies through three generations. In this instance a severe endocardial inflammation followed chorea, without the intervention of any arthritic symptoms.

On the evening of February 4, 1892, during the absence of the attending physician, I was asked to see B. J., a white female, ten years old. At my first visit the pale-faced, anemic child was lying crosswise in bed, with her chin flexed on her chest and the legs upon the abdomen. When approached by anyone, she begged to be let alone. Attempts at examination provoked fits of crying. The pulse was too rapid for me to count. Her tongue was coated with a pasty, white fur, its edges and tip being a deep red. The lips were cracked and fissured. The temperature taken in the axilla was 103°. The heart's action shook the chest-walls and was so tumultuous as to make a satisfactory physical exploration of the chest impossible at the time. The child had a slight cough, but there was no dulness on percussion; on auscultation the vesicular murmur was heard to be roughened. There were pain in the right iliac fossa, epistaxis, mental hebetude, a desire to be let alone, with a history of nausea and vomiting, together with irregular chills. Emaciation was marked and the adynamia profound. I prescribed a fever-mixture containing aconite, and left with a diagnosis of advanced typhoid fever almost settled upon. By the following morning the heart's action was reduced so that the condition of this organ could now be studied. There was at once apparent a soft, blowing, systolic murmur, heard best at the apex, and not transmitted to the back.

From the attending physician, who had now returned, I learned the previous history of the case, together with these additional facts: The child had been sick for six or eight weeks, with intervals of improvement. During the summer and fall of 1891 she had chorea, which entirely disappeared after the use of the official solution of potassium arsenite. The girl returned to school, but continued listless and complaining. Choreic movements again appeared in December, 1891, when she was put back on arsenic, and the dose increased to fifteen drops, *t. i. d.*, before any edema was produced. The dose was then decreased, and arsenic, with the addition of an iron, quinine, and strychnine tonic, continued until all spasmodic movements had disappeared. During this period the child complained of pains in the muscles of her right leg, but these were ascribed to influenza, then prevalent. She had not shown choreic movements for a month. Her temperature had lately been ranging between 101° in the morning and 103.5° in the evening, with daily or tertian chills. The chill, or cold stage, would be followed by a typical hot stage, and a sweating stage. Cough first appeared during the week previously to my seeing her, and had been increasing in frequency. There was no expectoration. The child's mother had died in the same room, ten days before, of unmistakable pulmonary tuberculosis, of fourteen months' duration.

Reviewing all the facts in the case, it seemed that we had here to deal with either enteric fever, endocarditis, a malarial remittent, or tuberculosis florida. The diagnosis of endocarditis in a child of ten is not easy, and is masked by the resemblance of its symptoms to those of other and commoner diseases. I will briefly detail the steps by which such a diagnosis was arrived at in this instance.

Enteric fever was excluded—because, although the temperature made an evening rise and morning fall, the variations were too great; and because of the absence of eruption, diarrhea, and tympanites; the stools were solid and without peculiar odor.

In favor of a diagnosis of pulmonary tuberculosis was the fact that there had been ample opportunity for direct infection from mother to child. Both were sick in the same room; both were coughing; both emaciating. The absence of consolidation, however, the sudden onset of serious symptoms, and the high temperature-range seemed to exclude tuberculosis.

After the chills, the temperature would rise rapidly and decline with the sweating stage. In this locality, the possibility of a malarious influence cannot be overlooked; but a remittent was excluded, because quinine had no effect upon the fever; the prostration continued between the paroxysms. The season of the year was also against such a diagnosis—this section being almost free from malaria during the winter months.

A diagnosis of acute endocarditis was therefore made, based upon the past history, the irregular chills, nausea and vomiting, the high temperature and the overacting heart, with a soft bellows-like murmur of organic origin. The attending physician stated that he had repeatedly examined the heart and found no murmur. In this case, it must have developed rather suddenly, and was not perceptible until late in the disease, the time at which I was called to see the case. There were no evidences of pericarditis.

¹ Read before the Laurens County Medical Society, March 27, 1892.

Accepting this diagnosis, appropriate treatment was begun. As long as hypertrophy kept up, reliance was placed upon tincture of aconite with alkalies, principally potassium bicarbonate. A blister was applied to the precordium. On account of continuous nausea, it was with difficulty that enough medicine could be retained to produce any effect upon the advancing disease. The irritability of the stomach was best controlled by minute doses of calomel, which was also given for its antiphlogistic effect. When compensation began to fail, we employed digitalis, strophanthus, and alcoholic stimulants, but with little success. An unfavorable prognosis had been given the family, after which they gave up hope, and it was hard to get any treatment properly carried out. The child was so ill that they seemed indisposed to disturb her to give food or medicine. We endeavored to maintain nutrition by using peptonized milk, nourishing broths, and liquid beef-peptonoids. Despite our endeavors, the temperature continued high, the powers of circulation and assimilation gradually failed, until insomnia and general venous stasis closed the scene. Death took place rather suddenly, three weeks after the onset of the acute symptoms. An autopsy was not allowed, and so the diagnosis could not be verified.

The family history of this little patient is interesting. She belonged to a strongly neurotic family. Her mother's father and her father's father both suffered with rheumatism. Her father had a most obstinate attack of sciatica during the fall of 1891. A brother had chorea at the age of twelve. An older sister has also had chorea. Both recovered after treatment with arsenic. I am uncertain whether this case was one of simple or of septic endocarditis. The rigors, the high temperature, the early development of the typhoid state, would seem to point to a septic origin. But there was no wound, while the existence of a rheumatic diathesis can hardly be questioned.

Chorea is not uncommon here. The statement made by Dr. Mitchell, and often quoted, that the disease never occurs in the negro race, I had no reason to doubt until recently. A negro boy (not a mulatto) between twelve and fourteen years old, living on a farm in the country, was brought to me, suffering with chorea. He was given Fowler's solution of potassium arsenite, and improved. This is the routine treatment. The dose is at first from three to five drops, and is increased until the symptoms abate or the point of tolerance is reached.

MISTLETOE AS AN OXYTOCIC.

BY HAMILTON P. HOWARD, M.D.,
OF BIG STONE GAP, VA.

DR. W. H. LONG, of the U. S. Marine-Hospital Service, in *New Preparations*, in 1878, claimed for mistletoe, as compared with ergot, for oxytocic purposes—first, that it acts more promptly and surely; secondly, that it produces *intermittent* uterine contractions, as opposed to *tonic* contractions, and for this reason it may be used in any stage of labor or in primiparæ. These claims he bases on an "extensive experience of its use between the years 1867 and 1878," and such was his uniform success with it in "hundreds of cases," that he reports, to use his own words: "It acts with so much more

promptness and certainty than ergot that I have been using it exclusively for years." With equal earnestness Dr. Long also advocates the use of mistletoe in menorrhagia and post-partum hemorrhage and in hemoptysis.

A drug that could be depended upon to induce with certainty *intermittent* uterine action would prove a boon to the obstetrician, not only in cases in which the induction of labor was indicated, but also, and more particularly, when pains are absent at term or have ceased from atonicity of the uterus. I am induced to report my own limited experience of mistletoe in the hope that further trials and reports of it may be made.

Mrs. J. B. A., thirty-six years old, had a history of eight abortions and miscarriages—the last at eight months, the remainder dating between the third and the sixth month. The patient first came under my care at third month of gestation, and was with difficulty carried to full term, her pregnancy being complicated by frequent attacks of cardiac asthma and a prolonged siege of general peritonitis brought on by rupture of adhesions due to old pelvic inflammation. She gave, further, a history of protracted labors, with profuse and persistent post-partum hemorrhages, not only in the premature birth, but also in all the abortions and miscarriages. In her own words, "her pains always died out," and artificial aids to delivery had to be employed. The child at eight months was born only after a week of interrupted labor, and then was "removed"; and I gather that ergot was freely used in this instance.

In her last labor, the outcome of which was a well-nourished and healthy six-and-a-half-pound girl, I made use of mistletoe, using the fluid extract in one-dram doses at intervals of twenty minutes for four doses. The circumstances and nature of the case were such that I deem it quite a crucial test of the drug. During my absence in another part of the State her labor began, and, according to her own statement, the pains were the strongest she had ever felt; they, however, only persisted for from twelve to fifteen hours. On my return, five days later, I found her utterly devoid of pains, the os dilated to the size of a half-dollar, soft, and non-resistant. On introducing two fingers, which were readily admitted, I made out a normal L. O. A. position. After waiting for two weeks for a renewal of pains, which I was unable to induce either by uterine compression, digital dilatation of the os, or suppositories of quinine, belladonna, and strychnine, I determined to make a trial of mistletoe, of which I had secured a specimen of the fluid extract with a view to its possible use in this case. Twenty minutes after exhibition of the first dose I was gratified by the commencement of excellent dilating pains, and, giving the second dose, I returned to my office for my satchel. Half an hour later, on my return to my patient, I found the labor progressing most satisfactorily. I gave the other two doses at irregular intervals, when the pains seemed to become a little irregular and less strong, but more as a preventive than because imperatively needed. In a little over five hours after giving the first dose of mistletoe the labor, which had been characterized by typically normal uterine action both as to strength and regularity, was terminated, the third stage being ended by the pain which followed the expulsion of the child. The uterus contracted firmly and promptly, with virtually no hemorrhage.

In this case delivery was almost entirely dependent upon uterine action alone, the condition of her heart making sustained abdominal effort impossible—a condition which, I felt convinced, would have led to a fatal termination had the labor been unduly prolonged, there being a double mitral lesion and marked enlargement, and, I think, failing compensation. The fact of her being so entirely dependent upon unassisted uterine action, I think, adds evidence to the character of the pains induced.

The following case in evidence of the action of mistletoe as an oxytocic I am enabled to report through the courtesy of my friend, Dr. C. D. Kunkel, of this place, in whose practice it lately occurred:

—, non-pregnant, was prescribed teaspoonful doses of the following mixture at four-hour intervals: Ext. pichi fl., f 3ijss; ext. mistletoe fl., f 3jss. After taking four doses, containing seventy-two minims of mistletoe, she sent for Dr. Kunkel, complaining of violent "cramps," which, upon investigation and careful examination, were found to be due to characteristic "labor" pains. These pains persisted for from four to six hours, and were strong and regular. The drug had been given on account of its antispasmodic properties, with pichi, in a case of cystitis with violent tenesmus.

EXTENSIVE TREPHINING FOR THE RELIEF OF EPILEPSY FROM TRAUMATISM; COMPLETE RECOVERY.

BY J. T. BINKLEY, JR., M.D.,
OF CHICAGO, ILLINOIS.

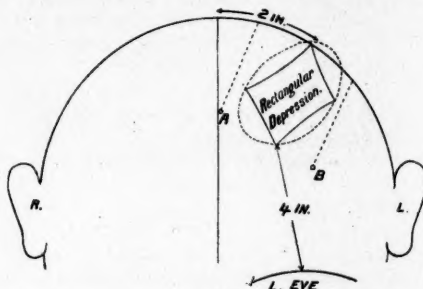
In March, 1891, O. D., thirty-seven years old, applied for treatment for fits. In 1875 he was hit upon the head with a hatchet, and was unconscious for several hours. He was able to be out after a few days, but had two or three convulsions monthly until June, 1883, when Dr. Bevan, of Gadson, Ala., removed a few small pieces of bone. He was then much improved, but not entirely relieved. On the 11th of July, 1885, Dr. Sheminick, of St. Paul, removed a few more fragments, and the patient was entirely relieved until December 17th, following, when he was struck upon the head by a falling telephone pole. He had convulsions on the same day, and daily thereafter until April 8, 1886. From that date the intervals between convulsions grew longer and longer, sometimes two and three months elapsing, the convulsions occurring when the patient had been drinking.

About a year before the patient came to me, he was taken into the Tacoma Fire Department, where he remained until he had a violent convulsion, following a spree. He was immediately dismissed from the department, began to drink freely, and had convulsions daily. When he came to me, he said: "I had twenty-eight fits yesterday, and have had from two to ten almost daily for four months."

On examination I found a rectangular depression, as indicated in the accompanying diagram, and I decided to trephine.

The individual was without money, but the chief and boys of the Fire Department contributed the hospital expenses, and he was admitted to the Fannie Paddock Hospital, of Tacoma, Wash., late in April, 1891. On the 20th of May, assisted by Drs. Hickman and Philpot,

the head having been shaved, antiseptically cleaned, and the patient etherized, I did the trephining. I made a U-shaped incision, the lines of the incision starting on either side of and well in front of the anterior border or angle of the depression, as indicated at *A B* in the illustration, and extending well backward and to the left beyond the posterior margin of the depression, the loop of the U extending down to the middle of a line from the left ear to the occiput. The flap was dissected up—integument and periosteum separately—from behind forward, and both layers of flap turned down over the bridge of the nose. The periosteum was firmly adherent to the dura mater in a small area in the center of the depression, where bone was missing; much difficulty was



A, B. Anterior points of the U-shaped incision. The dotted oval indicates the area of bone removed.

experienced in the separation. When this was accomplished, the finger could detect a well-marked marginal depression of the inner table of the skull, and a fibrous thickening of the dura. The opening through the skull was too small to permit the use of a rongeur forceps, and we bored through on one side with a trephine, then with the rongeur forceps cut away the entire depressed margin of the skull. The bone was unusually hard, so that it was necessary for the gentlemen present to take turns at the trephine and forceps. After we had removed all the bone over a space as large as a silver dollar, no further depressed points could be felt. Small patches of thickened dura were snipped off, and catgut passed around the bleeding vessels and tied. Bleeding from the bone was slight, and controlled by plugging or by caulking with catgut. The oozing was checked by means of hot sponges (too hot, I believe, and responsible for the subsequent suppuration), firmly held for a few minutes upon the exposed surface; the flaps were stitched back separately with catgut, the wound was dressed antiseptically, and a roller cap-bandage applied. The patient rallied well, but was hard to control; he would get out of bed hourly after the second day, when not closely watched. He said "he felt as well as ever, and had missed his fits."

On about the fifth day, a little discoloration of the dressing over the left ear caused me to remove the cap. The wound was found suppurating freely. I syringed it thoroughly and changed the dressing daily for ten days thereafter, when the wound began to improve. As I was coming East, I left the case in the hands of Dr. Hickman, who attended it for two weeks, when the wound was healed and the patient dismissed. There has never been any pain or recurrence of convulsions

since. A letter from Dr. Hickman, dated Tacoma, November 12, 1891, seven months after the operation, reads: "Our patient has never had another convulsion, and I consider that he is radically cured."

A letter from the patient, dated December, 1891, says: "I never have had a pain or a fit since the operation, and I am working every day."

Although this case adds valuable testimony to our knowledge of the surgery of the brain, and the happy results of trephining depressed areas, there is another interesting feature that merits consideration, viz.: the effect of stimulants upon persons subject to convulsions. Here was an individual, predisposed to fits because of an injury, who, when abstemious, was free from convulsions from 1886 to 1891—nearly five years; and who, under the excitement of intoxicants and consequent increased blood-pressure, relapsed into a miserable epileptic within a fortnight.

A CASE OF ABSCESS OF THE TEMPORO-SPHENOIDAL LOBE, AND OF THE MIDDLE LOBE OF THE CEREBELLUM.

BY FRANK P. NORBURY, M.D.,

ASSISTANT PHYSICIAN, ILLINOIS CENTRAL HOSPITAL FOR THE INSANE, JACKSONVILLE, ILL.; FORMERLY ASSISTANT PHYSICIAN, PENNSYLVANIA INSTITUTION FOR FREEBLE-MINDED CHILDREN, ELLWYN, PA.

F. M., a married farmer, thirty-two years old, was admitted to the Illinois Central Hospital for the Insane four weeks after the development of insanity, a cause for which could not be determined. But little of the previous history could be learned. Several weeks previously to admission to the hospital, the patient complained of severe headache, and he became dull and stupid. A short time afterward "he had seven fits." On admission, no symptoms of organic brain-disease were observed. Three days later, however, it was noted that the gait was cerebellar; vertigo was complained of; ptosis appeared, and some aphasia was evident. The condition continued for several weeks, when early one morning the man had a severe convulsion, followed by vomiting. Seven hours later he had another attack of vomiting, followed by apoplectic symptoms. He became unconscious, with face turgid; frothy mucus was discharged from the mouth; respiration was slow and labored; the pulse was bounding; the temperature was 100.2°; there was conjugate deviation of the eyes downward and to the right; the pupils were insensible to light; there was left hemiplegia, with some hemianesthesia; there were no muscular contractions; the bowels moved involuntarily. On the following day the paralytic symptoms were more extensive, the muscles of deglutition being involved. Coma was profound; the temperature was 101.2°; the pulse 80; the respiration 40. There was some pulmonary edema. A day later, the pulmonary edema was more pronounced; the pulse was 94; the temperature 100.4°; the respiration 42. Ptosis of the right side was now observed. The next day brought little change. The pulse was 98; the temperature 99.2°; the respiration 36. On the following day the pulse was 120; the temperature 101.2°; the respiration 56. The patient went into a state of collapse, from which he failed to emerge.

A post-mortem examination was made thirteen hours after death. The dura mater was found adherent in the occipital region, just above the internal occipital protuberance, in an area an inch and three-quarters by half an inch. The meninges were engorged on the right side. The pia was adherent to the cerebrum beneath the area referred to. On cutting through the falx cerebri, cheesy material was found attached to it. On removing the brain, shreds of broken-down brain-substance and pus were noticed at the base. On section of the brain, an unencapsulated abscess was found in the right temporo-sphenoidal lobe, extending to and opening into the lateral ventricle. The centrum ovale was uninvolved. The mass of disorganized brain-substance was not purulent. A deposit of pus was found at the base, in the region of the motor oculi nerve. Further section revealed the existence of an abscess in the middle lobe of the cerebellum.

The presence of a lesion of the cerebellum had been diagnosed from the pressure-symptoms, the vomiting, the titubation, and the ptosis, but tumor was suspected, and not abscess. The terminal symptoms of the abscess of the temporo-sphenoidal lobe simulated those of cerebral hemorrhage. The perforation into the lateral ventricle, however, affords the explanation. Pressure in the region of the internal capsule will account for the temperature-range, and the involvement of the fourth ventricle for the varied motor symptoms. The temperature-range may also be explained by the inflammatory process in the ventricles. The probable cause of the multiple abscesses was a traumatism in the occipital region at a point externally corresponding with the localized adhesion of the dura internally. There were no evidences of ear-disease, necrosis of bone, or previous suppurative process elsewhere.

The case reported is interesting, first, because of the obscure symptoms attending the abscess in the temporo-sphenoidal lobe and the existence of marked signs of cerebellar pressure; and, second, because of the infrequency of multiple abscesses from traumatism in the regions occupied.

The latent abscess terminated precipitately, hence the apoplectic character of the symptoms.

A CASE OF COMPLETE OUTWARD DISLOCATION OF THE RADIUS AND ULNA AT THE ELBOW; REDUCED AFTER DIVISION OF THE TENDON OF THE TRICEPS.

BY JOHN HOMANS, M.D.,

VISITING SURGEON TO THE MASSACHUSETTS GENERAL HOSPITAL.

IN THE MEDICAL NEWS for July 11, 1891, Dr. Isham, of Cincinnati, has reported a case of outward dislocation of the radius and ulna, and he states that the whole number of cases reported in the United States is fifteen. I wish to add another, the first and only case I ever saw. The case was a chronic one of three weeks' standing. The elbow was sore, inflamed, and swollen. On this account the dislocation was more difficult to reduce, and the resulting disability has been greater than it would have been in a similar case received immediately after the accident. Oren G., fifty-seven years old, a farmer entered the Massachusetts General Hospital, June 3, 1891, stating that three weeks previously he had fallen

from a tree, striking his right elbow. He felt something crack in the joint, and immediately sent for a physician, who etherized him and put the arm in splints. When the splints were removed, the arm, forearm, and elbow were found ecchymosed, swollen, and tender. The arm was useless, and any movement of it caused intense pain. A consultation was held, and it was decided to send the patient to the Massachusetts General Hospital. On examination, I found the condition of the arm described; very little flexion, pronation, or supination could be performed. The forearm was carried at an oblique angle with the arm. The inner condyle stood out under the skin in plain outline, and the integument looked as if it would burst, while the head of the radius, with the olecranon and coronoid process of the ulna, all uninjured, lay to the outer side of the external condyle. After etherization, the adhesions were broken up by passive motion, and prolonged attempts at reduction were made patiently and carefully, but with much force and without result. Dr. C. B. Porter, the senior surgeon of the hospital, suggested division of the tendon of the triceps. After this was done, reduction was easily accomplished. An internal angular splint was applied and a drip of cold water was kept upon the limb, on account of the heat, swelling, and tenderness. The forearm was gently flexed and rotated on June 15th.

On June 25th the man could flex and rotate his forearm, but the joint was somewhat stiff and sore. As he appeared to be an intelligent American farmer, and would probably follow my advice in regard to using his arm, I thought he would get along better in his own home than in the hospital, and on June 23d he was discharged.

I have not seen him since, but have heard from him several times. Perhaps his own words and expressions will describe the present condition and usefulness of his arm better than I can do. It is not to be expected that a man, fifty-seven years old, with more or less rheumatic stiffness of his joints, who has had a displacement of the elbow unreduced for three weeks, will recover perfect motion and usefulness of his arm. It is interesting and important to know what his present condition is—nine months after the injury. I append a letter just received from him:

FEBRUARY 23, 1892.

DEAR SIR: Your letter of inquiry has been duly received. It is difficult for me to write just how much I can use my arm. There are many little things I can do, and some which I would like to I cannot do. I can raise my arm to the top of my head, but not as easily or as quickly as one with a perfect elbow. I feed myself some and cut meat with the right hand, but it seems rather awkward, and I want plenty of room in which to do it. The fingers are stiff, but they were so before the accident, and the whole arm is so weak that I cannot grasp or hold much of any weight. The hand is very sensitive to cold. There is stiffness in the elbow, so that I cannot quite straighten the arm. But withal I find it very helpful every day—more so than I can express; and judging from the past I think it will continue to improve.

Yours truly,
OREN G.

A CASE OF TONSILLITIS; TRACHEOTOMY.

By C. M. MCGUIRE, M.D.,
OF SEYMOUR, IOWA.

ON the morning of April 7, 1892, Dr. Eva M. McGuire was called to see a rather poorly-nourished, breast-fed female infant, of healthy parentage, eight months old. The infant was restless, with an axillary temperature of 100° F.; the pulse was 120, the respiration 30. No abnormality was detected in the lungs or in the fauces. The right parotid gland was swollen, and somewhat tender. A mercurial, to move bowels, and phenacetin, gr. ij, every three hours, alternating with potassium bromide, gr. iv, were prescribed, and it was directed that hot fomentations be applied to the parotid gland.

On the morning of April 9th, Dr. McGuire was again called to see the infant. The parents feared that pneumonia had set in. Careful examination failed to discover any abnormality of the lungs. Temperature, pulse, and respiration were about the same as at the first visit. The right parotid gland was more swollen, and the left seemed enlarged. The right tonsil also was slightly swollen and red. No white patch, no membrane was apparent, and there was no hoarseness. The jaws seemed stiff when an attempt was made to open the mouth. The infant had continued to nurse, but would hardly take the medicine. Tincture of aconite was added to the potassium bromide solution; whiskey and cream were ordered to be given every four hours, and hot fomentations to be applied to the parotid glands. The child was playful on April 10th. It took food and medicine until the evening of April 11th, when it would not nurse or take its medicine. The right parotid gland was now greatly swollen and hard; the left not so much so; the mouth was opened with much difficulty. On examination of the fauces both tonsils were found greatly swollen and red, more especially the right. The infant cried continually from 9 P.M. until 4 A.M., except for an interval of about an hour and a half, during which it slept under the influence of opium.

Tincture of opium was given in full doses per rectum, and phenacetin by the mouth. The tonsils were freely and frequently swabbed with hydrogen dioxide. The infant's breathing was difficult, owing to the swollen tonsils. I was sent for at 3 A.M., and advised tracheotomy as the only chance for the infant's life. Dr. Earnest, of Seymour, was also sent for, but before he arrived the parents urged the operation, which was performed by Dr. Eva McGuire and myself, with the aid of the light from a poor oil-lamp. Not having a silver canula, we used a new sterilized, No. 14, American, soft-rubber catheter, held in position by a safety-pin. The infant was anesthetized by means of chloroform. The tube was inserted just below the first cricoid cartilage. The hemorrhage was slight. Sublimated cotton, frequently moistened, was kept around the tube, and moist sublimate gauze kept over its orifice. The atmosphere of the room was kept moist by boiling water on a stove constantly. The infant breathed easily through the tube for awhile; then artificial respiration had to be employed for two or three hours. The child seemed to be doing well, but in twelve hours from the time the tube was introduced the action of the heart ceased. The infant had taken its medicine and food quite well. No fluctuation could be detected in the parotid gland or

tonsil, and there was no rise of temperature until a few minutes before death. There were no rigors or chills, denoting the presence of pus; no hoarseness at any time, denoting edema of the larynx. I report this case because I have been able to find no other in which inflammation of the tonsils appeared secondarily to inflammation of the parotid glands.

PILOCARPINE NITRATE IN FACIAL ERYSIPELAS.

BY G. V. HALE, M.D. (JEFFERSON),
OF WHEATLAND, TEXAS.

PERHAPS none of the common diseases with which the general practitioner is daily compelled to grapple causes him more perplexity and embarrassment, as it continues to advance in spite of scientific therapeutics, than that well-named ancient and modern "Fire Erysipelas." The affection is especially indigenous to this locality and State, and from quite an extensive acquaintance with it in patients of all ages, I feel it a duty to record the satisfactory results obtained from the use of pilocarpine nitrate administered hypodermatically in aqueous solution, in doses of from one-fortieth of a grain for infants to half a grain for adults—the dose at all events being sufficient to maintain a steady appreciable diaphoresis; stimulants being given at the same time, as required. In submitting my experience with this remedy I am neither unduly enthusiastic nor am I unmindful that in the treatment of erysipelas the great master Trousseau "used no remedies except a laxative, but he pushed the administration of food—which must be done, of course, in all cases—and of the great number of cases treated by him only three died."

Two cases of facial erysipelas in infants—one male, one female—respectively seven and nine months old, with temperature (rectal), when first seen in consultation, of 104° and 105°, cerebro-spinal symptoms, after intelligent treatment by all the usual means, yielded to pilocarpine nitrate in slightly diaphoretic doses, being markedly improved in from twenty to thirty hours and convalescent in a week. The only laxative used was castor oil. In these cases, contrary to my usual experience, we were unable to check the spread of the dermal inflammation. It gradually invaded every inch of skin, even to finger and toe tip; but the advancing line was only of a pale reddish hue. The temperature declined to 100° after the third dose; the infants rested well and nursed again (the breast had been refused and breast milk was administered with a spoon for about thirty hours).

The results of these cases, so unpromising and malignant at first, are entirely consonant with my experience with the remedy in many other cases and the course of the disease in these instances varies only in the failure to promptly arrest the advancing line of inflammation. I began using jaborandi and pilocarpine after listening to the remarks of my honored instructor, Professor Da Costa, concerning jaborandi in erysipelas, at a clinic at the Pennsylvania Hospital several years ago, and have not failed to relieve a single case in which the remedy was employed early enough to have had anything like a fair trial.

MEDICAL PROGRESS.

The Relations of Various Bacterial Poisons to Immunity and Cure.—G. KLEMPERER (*Zeitschr. f. klin. Medicin*, 1892, xx; 1, 2, p. 165) defines toxalbumins as albuminous bodies that result from the growth of bacteria in bouillon. Solutions of toxalbumins injected into animals in small, gradually increasing quantities protect from infection by the respective bacteria. The specific activity of toxalbumins is related to definite temperatures. Proteins, on the other hand, are albuminous substances that are contained within the bacterial organism. They are obtained by boiling pure cultures of bacteria in the nutrient bouillon or in washings in water. The characteristic of proteins is that they are not decomposed by protracted boiling. Tuberculin is the protein of tubercle-bacilli and the only protein that has hitherto been employed to confer immunity and to accomplish a cure. Klemperer has prepared proteins from the pneumonia-coccus, the bacillus pyocyaneus, the micrococcus prodigiosus, the bacterium coli, and the bacillus anthracis. Injected into animals each gave rise to a characteristic reaction, *protein fever*, analogous to that following the employment of tuberculin. Some could be used interchangeably with tuberculin, reaction and tolerance remaining otherwise unaffected—tuberculous animals reacting to either protein and the tolerance established to the one holding good for the other. With none of the proteins employed was immunity conferred or cure accomplished. Klemperer employs the term toxin instead of toxalbumin. He has especially studied the toxin of the pneumonia-coccus. Immunity to pneumonia has been conferred upon animals by treatment with pneumotoxin. Natural recovery from pneumonia depends upon the conversion of pneumotoxin as a result of the pyrexia into antitoxin. Artificial recovery may be brought about by the injection of the serum of an animal in which the toxin has already been converted into the antitoxin. The process of conversion, however, requires several days, and infected animals often die; but the process can be accelerated by heating the toxin prior to injection. The results warrant the conclusion that immunity can be conferred after infection has taken place, by the injection of sufficient quantities of suitably prepared toxin.

Sudden Death from Latent Tuberculous Leptomeningitis.—HERYNG (*Internationale klin. Rundschau*, 1892, No. 14, p. 545) records the case of a boy, ten years old, in which the galvano-cautery was employed in the treatment of a hypertrophic rhinitis. On the morning following an application the boy was found dead. The autopsy disclosed the existence of a tuberculous leptomeningitis, particularly involving the base. In the left occipital fossa, attached to the membranes and lying upon the cerebellum, were two tumors, one as large as a hazelnut, the other as large as an English walnut. On section the growths were found to be caseous at the center; the periphery was infiltrated with round cells; the stroma contained giant cells, with tubercle-bacilli. The upper portion of the left lung was adherent to the costal pleura. On both layers of the pleura miliary nodules were visible. The apex of the lung contained a small number of grayish-white points. The bronchial glands

of the left side were enlarged and caseous; so were the mesenteric glands. The serous layer of the lower portion of the small intestine presented a number of areas occupied by miliary nodules. The mucous membrane of the corresponding portion of the small intestine and of the adjacent portion of the large intestine was covered with grayish-white nodules. It was learned that the boy had had a severe attack of measles a year previously, complicated by exudative pleurisy upon the right. Shortly afterward, after an indiscretion in diet, he had had an attack of convulsions.

Infection-proof and Intoxication-proof.—BRIEGER, KITASATO and WASSERMAN (*Zeitschr. f. Hygiene*, 1892, Bd. xii, p. 91) have made an experimental study of bacterial intoxication. Pathogenic microorganisms may cause symptoms either by their multiplication and general dissemination, or by the absorption of toxic substances produced at the seat of local infection. Some animals naturally resist general infection; others resist intoxication. By certain methods of treatment the protection natural to some animals can be artificially extended to others. An animal may, however, be intoxication-proof, but not immune or infection-proof, and *vice versa*. By the treatment of cultures of the bacilli of tetanus, cholera, diphtheria, typhoid fever, and erysipelas, with an extract of the thymus gland, the virulence of the organisms was diminished, while immunity was conferred; the serum of immune animals had the power of protecting other animals. The results with the bacilli of hog-erysipelas and anthrax were not so conclusive. The conclusion is reached that the protective substances are not contained in the products of tissue-metamorphosis but within the bacterial organism. The characteristics of these substances are as follows: they contain a relatively large proportion of phosphorus; in contrast with toxalbumins, they pass with difficulty, if at all, through porcelain filters; they are destroyed by temperatures of 212° F.—*Deutsche medicin. Wochenschr.*, 1892, No. 14, p. 317.

Thoracocentesis.—At a meeting of the French Academy of Medicine, DIEULAFOY (*L'Abeille Medicale*, 1892, No. 18, p. 137) advocated the employment of thoracocentesis whenever the volume of fluid in the pleura furnished the indication. An effusion of 1800 c.cm. (three pints and a half, plus) marks the limit. Dyspnea as an indication cannot be relied upon, for death may result from the volume of the effusion in the entire absence of dyspnea. Dieulafoy denied that thoracocentesis, properly performed, led to the conversion of a simple into a purulent effusion. He related that he had performed thoracocentesis almost four hundred times, without empyema developing in a single instance.

The Differentiation of Typhoid-bacilli and the Bacilli Coli Communis.—THEOBALD SMITH (*Centralbl. f. Bakteriolog. u. Parasitenk.*, 1892, xi, 12, p. 367) refers to the observation made by him in 1889 that typhoid-bacilli on the one hand, and colon bacilli and other organisms found in the intestinal contents of man and animals on the other hand, are to be distinguished from one another by the fact that the latter in culture cause decomposition of glucose with the evolution of gas, while the former do not.

THERAPEUTIC NOTES.

Lactic Acid for Tuberculous Fistulæ.—ZIPPÉL (*Centralblatt für Chirurgie*) recommends the topical employment of lactic acid in the treatment of tuberculous fistulæ. Protracted application is necessary, and this is secured by means of suitably prepared bougies. To this end, equal parts of gelatin, lactic acid, and water are thoroughly mixed and gently warmed, while 20 per cent. of menthol is added; the mass is poured into moulds, which are for twenty-four hours placed in an ice-chest. The rods are then placed in an exsiccator over calcium chloride. At the expiration of eight or ten days they are covered with collodion. Before being used they are cut cone-shape at one extremity, and are then ready for introduction. If the sheath of collodion is objectionable, the rods may be kept in oil or in benzine to which 30 per cent. of menthol has been added. Menthol is added to diminish pain. If starch with tragacanth be substituted for the gelatin, the rods are harder and less elastic.—*Wiener medicin. Presse*, 1892, No. 15, p. 596.

Goiter Successfully Treated by Injections and Enucleation.—O'REILLY (*Lancet*, No. 3579, p. 741) has recorded the case of a woman, forty-two years old, who presented an immense cystic goiter of thirty-six years' standing. By means of a "double-barrelled" syringe of special device some of the contents of the mass were withdrawn, and solutions of mercuric chloride, resublimated iodine, and potassium permanganate alternately injected. After two months' treatment, in the course of which some seventy injections were made, the tumor was reduced to one-third of its original size, and the symptoms previously present relieved. A radical operation was now decided upon, and the entire right lobe of the gland, weighing more than two pounds, was removed. The patient made an excellent recovery, the left lobe undergoing spontaneous reduction in size.

Black Snakeroot for Dysmenorrhea and Ovarian Irritation.—From the results obtained in a series of cases JAMES BRUNTON (*Practitioner*, xlviii, 4, p. 265) concludes that *actea racemosa* (black snakeroot) possesses anodyne properties and may, with advantage, take the place of bromides and opiates for the pain of dysmenorrhea. In addition, the drug has a direct action on the uterus, increasing the menstrual flow when scanty. It is best administered in doses of thirty minims, thrice daily, beginning three days before and continuing throughout the period. It is sometimes useful in menorrhagia and metrorrhagia. Its action is almost specific when there are ovarian pain and nervous depression.

For Tapeworm.—

R.—Strontii lactat. ʒiv.
Aque destillat. ʒij.
Glycerini q. s.—M

Sig.—Two teaspoonfuls daily in the morning for five days.—LABORDE, *Journ. de Med. de Paris*, No. 15.

Atropine for Gastric Hypersecretion.—In a case in which the gastric juice was secreted in excess, and other measures had failed, VOINOVITCH obtained curative results by the administration of one one-hundredth of a grain of atropine three times daily.—*La Sem. Méd.*, No. 17.

THE MEDICAL NEWS.

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SATURDAY, MAY 14, 1892.

THE AMPLIFICATION OF THE QUARANTINE SERVICE.

QUARANTINE, thoroughly organized upon a scientific basis and judiciously and skilfully conducted, not only protects the public health but facilitates commercial intercourse. It seeks first of all, by its far-reaching influence and coöperative organization, the prevention of disease as the surest way of preserving the public health and uninterrupted commercial communication. Failing in this, it aims, in the second place, at the prompt suppression of disease with least embarrassment to commerce. In order to accomplish the first object, it is manifest that a system must be adopted that extends its surveillance to foreign ports. To some extent, this is now done by consular agents and special officers acting under the sanction and direction of the national authority, and with the acquiescence of foreign governments. But ideal results can only be obtained by a well-organized system operated under international coöperation and made to apply to ports of departure as well as to ports of entry, and extending its supervision over vessels on the high seas. So comprehensive a scheme necessarily involves the assumption by the government of the control of quarantine.

Quarantine is the necessary interposition of sanitary surveillance for the purpose of detecting and excluding dangerous communicable diseases. It is not necessarily burdensome, but must, at whatever cost, effectively guard the public health; otherwise it is an expensive formality, obstructive of commerce without yielding any compensative advantages. If wisely and efficiently carried out and supported by intelligent and full coöperation of other countries, under proper international agreements, it is not only preventive of the introduction of disease, but a positive advantage to commerce by avoiding those calamities that, in the absence of regulations or from their lax administration, occasionally must happen and disrupt for the time commercial intercourse and seriously embarrass trade.

The fundamental principle of correct quarantine administration is the prevention of disease. The neglect of measures of prevention abroad necessitates the provision of regulations at home to meet all possible consequences. By reason of limited jurisdiction and scope of authority, quarantine has hitherto concerned itself almost exclusively in the restriction and suppression of disease. The imposition of disabilities has its salutary effect. It is more through fear of the consequences than by the exactions of law that measures of precaution are observed. So long as authority is hemmed in by local bounds, just so long will progress in the development of the highest function of quarantine service be obstructed.

The prevention of diseases involves a knowledge of their nature, origin, and causes, and the continuous and assiduous application of measures based upon such knowledge. It is not the want of knowledge, but the neglect to profit by it, that brings disaster upon the commerce of the world. The great fault in existing systems is the lack of concern with regard to the condition of departing vessels. Bills of health are optional, and not mandatory as they should be. The opportunity to evade wholesome restraint is seldom barred. Hence the assumption of risks by ignoring prudent measures of protection, which provokes calamities that are often visited upon the unoffending. Flagrant defiance of humane precautions would not be possible under the censorship of the national authorities.

In order to secure equal advantages, the responsibility of quarantine administration should be shared by countries bound together by trade-relations. Private interests, those of the shipowners,

and public interests, those of the community and State, being allied in seeking the advantages of strict sanitary administration, it is incumbent on governments, in view of their national interests, to exercise the authority, under international agreements, of regulating the sanitary management of the merchant marine in port and on the high seas, and all that pertains to quarantine. Mutual protection of health and commerce can only be assured by reciprocal agreement and concert of action. Coöperation is to be effected on a basis of mutual advantage by international agreement on a code of sanitary and quarantine rules and regulations founded on established general principles universally applicable, and adapted to the peculiarities of the service. These regulations should be applicable to commercial ports and to vessels upon the high seas. There should be a guarantee of reliable administration of the health-laws of every port, and a trustworthy certification of the exact state of health. There should also be required a reliable certification of the health of the crew and passengers and of the good sanitary condition of the vessel and cargo, before leaving port. Vessels of the larger size, especially those carrying emigrants, should be under the skilled and rigid sanitary supervision of officers permanently attached thereto, and the smaller craft under the supervision of deputized officers, who shall act under an approved code of regulations. Accurate daily records of the health of the vessel while at sea should be kept, and an attested copy be prepared for the advice of officials at the port of entry. The enforcement of these measures will, by preventing and restricting disease, aid in lessening the burdens of quarantine, and inure to the advantage of the health and commerce of the nations.

Under vigilant supervision it is hardly possible for vessels to become infected, but nevertheless cases of infectious disease will occur on shipboard, which will subject the vessel to treatment at the quarantine station. Under modern practice, detention is not required for a longer time than is necessary to form a certain judgment of the health of the vessel, and in certain cases for discharging the cargo, removing the passengers, etc., and disinfecting the vessel and its contents. It may be necessary to remove the passengers and crew for the purpose of observation, and hence every station should be provided with accommodations for the greatest possible demand for properly caring for passengers during observation. This is one of the greatest defects in

local quarantines at the present day, but under national control this difficulty can be easily avoided. The facilities for the varied application of perfect disinfection must exist, otherwise quarantine is robbed of its main dependence.

The advantages of establishing quarantine under government control, broadened by international compacts, are: uniformity of system; general application, even to vessels on the high seas; efficiency of personnel, from life-duty and experience; concentration of apparatus and force at any port in emergencies; full sanitary reports of the ports of the world and advance knowledge of the condition and movements of vessels; avoidance of local prejudice and discrimination; economy of administration; uniform system of quarantine charges and fees; freedom in selecting the most eligible sites for quarantine stations irrespective of State jurisdictions; facilities for collecting valuable data; and the systematic and progressive study of contagious and pestilential diseases, and the establishment of confidence in the reliability of the service and the consequent avoidance of needless panic.

As a preliminary to negotiations for an international system it is absolutely necessary to establish a national service that shall have exclusive control of the quarantines of the country. Under such a system the present quarantine practices could be simplified, harmonized, and systematized as preparatory to entering into treaties with other nations for reciprocal advantages.

The attention of the coming meeting of the Pan-American Medical Congress should be directed toward the ends spoken of in the foregoing remarks. An excellent opportunity will be presented for establishing uniformity, encouraging coöperation, and formulating the desired regulations of an ideal international quarantine service.

SCLEROSIS OF THE NERVOUS SYSTEM.

THE pathology of the sclerosis of the nervous system is not perfectly understood. The lesions are, as a rule, readily recognizable post-mortem, and during life the symptoms are generally fairly distinctive. It is, however, not a settled question whether what is called sclerosis is always the result of a single process, or is the terminal stage of many different primary conditions. We are not in a position always to indicate the primary process; and, again, it is difficult to make a distinction between

inflammation and degeneration. While the distinction is, perhaps, a refined one, the view has been expressed that the systemic sclerosis—posterior, antero-lateral, descending and ascending—are dependent upon degeneration of axis-cylinders, followed by a conservative substitution of connective tissue; while cerebro-spinal, disseminated, or multiple sclerosis is considered as a hyperplasia of the connective tissue of tracts of various distribution, followed by secondary degeneration of the nerve-fibers. Whatever the sequence, the ultimate result is much the same. It can be safely accepted that in both instances we have to do with a chronic inflammatory process.

There is abundant reason to believe that there is the closest relationship between the various forms of nervous degeneration known as sclerosis, although the explanation why certain systems are so often alone affected is beyond our knowledge. On the other hand, it must be conceded that there are many cases in which the symptoms do not correspond to those of a simple systemic affection, limited to a single tract of fibers, but are those of lesions of irregular distribution, and post-mortem investigation has frequently verified the conclusions of clinical study. As accepted types of such mixed forms we have multiple sclerosis, ataxic paraplegia, and Friedreich's ataxia, or hereditary ataxic paraplegia. In the last two the lesion is practically the same—a sclerosis of the posterior and lateral columns—and the clinical differences are too slight that much stress should be laid upon them. The matter of hereditary transmission is not always easy of determination, and at best is only indicative of the transmission of a tendency to altered nutrition, a heightened susceptibility to abnormal processes. In a given case, it may be impossible to intelligently separate the one from the other. This brings us, too, to the close clinical resemblance between multiple sclerosis and paralysis agitans. There are apparently border-line cases that can be placed in either category, and a few cases have been recorded in which, during life, the symptoms of the one condition predominated, while the lesions of the other were found post-mortem. It is on account of these close resemblances, and the intimate interweaving of the two affections, that we feel justified in considering paralysis agitans as a form of diffuse cerebro-spinal sclerosis.

Recently, attention has been called to a group

of cases in which the symptoms conform to none of the previously recognized types, and in which lesions of irregular distribution have been found. To these cases the designation combined sclerosis has been applied. It is not rare to have added to the symptoms of a systemic sclerosis manifestations of involvement of another system of fibers. It is also a perfectly well known fact that inflammation of the peripheral nerves is often associated with posterior spinal sclerosis, while the association of posterior sclerosis and general paralysis of the insane is a matter of clinical record.

RAYMOND (*La Medecine Moderne*, 1892, No. 15, p. 276) has reported a case of combined sclerosis, in which symptoms of involvement of the posterior columns predominated. Subsequently, symptoms of paretic dementia were added, and a fatal termination was not long deferred. When an autopsy was held, a diffuse sclerosis of the cord was found, with especial involvement of the posterior and lateral columns, and interstitial inflammation of the cerebral convolutions.

THE GRADUATION FEE.

DOUBTLESS the wrestlings of our medical colleges with financial problems are already sufficiently severe without criticism of any of the established sources or methods of income. But doubtless, also, the graduation fee is indefensible on grounds of justice. After a student has paid his tuition fees for three or four years, fulfilled his duties, passed his examinations, and in every way complied with the regulations and legitimate demands of his *alma mater*, the likelihood of his thinking the *mater* decidedly *dura* will be increased by her demand for \$30 or \$40 before she will certify to the fact of his completed course of study. It may be said that the "sheepskin" itself and printing (or its illumination in the highest style of Spencerian art), costs a certain sum, and that the rental of the public hall in which the exercises are held, together with sundry other expenses—the Faculty banquet, for example—altogether make up a considerable item of expense for the institution, or, as the case may be, for the members of the Faculty.

In answer it may be protested that the parchment, with whatsoever chirographic skill illustrated, costs but a dollar or two; that often the public hall is charged to the graduates—as indeed it should be, but not if in addition to the graduation fee; and lastly,

that if the Faculty banquet is a matter of money it is not one of generous good-will and good-bye.

There is a certain amount of hugger-mugger about all this custom. What legitimate excuse can be offered for it? The great majority of medical students finds this unjustifiable demand hard enough to meet; but it is the custom; the students secretly feel its injustice, and they pay the fee and go away feeling less kindly to the college than they should.

Would it not be better to put the tuition fees properly high, let every charge rest upon a real excuse and reason, charge for diplomas and the public hall at cost, and not as at present from 100 or 200 hard-pressed and unwilling men extract \$2000 or \$6000 for reasons that will not bear frank discussion?

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting, April 27, 1892.

Vice-President CHARLES H. THOMAS in the chair.

DR. SOLOMON SOLIS-COHEN read a paper entitled, "Shall Physicians become Sales-agents for Patent Medicines?"

Section 4 of Article I of the By-laws of the Philadelphia County Medical Society reads as follows:

"Any physician who shall procure a patent for any instrument of surgery, or who sells or deals in patented remedies or nostrums, or who shall give a certificate in favor of a patented or proprietary remedy or patented instrument, or who shall enter into an agreement with an apothecary to receive pecuniary compensation or patronage for sending his prescriptions to that apothecary, shall be disqualified from becoming or remaining a member."

Article VIII of the By-laws of the Philadelphia County Medical Society accepts as an integral portion of those by-laws the Code of Ethics of the American Medical Association.

A section of that code of ethics treats "Of the Duties of Physicians to Each Other and to the Profession at Large." Article I of that section sets forth "Duties for the Support of Professional Character." Section 3 thereof condemns open or underhand advertising as "derogatory to the dignity of the profession." "These," it says, "are the ordinary practices of empirics, and are highly reprehensible in a regular physician." Section 4 continues:

"Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine, or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For if such *nostrum* be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also repre-

hensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them."

To the clearness and force of this dictum nothing can be added. Its wisdom and its justice are beyond dispute.

It is unfortunately true that much of our therapeutics is as yet empirical. Nevertheless the best endeavors of the true physician are directed toward establishing a rational basis for that which experience has proved to be beneficial; toward obtaining scientific data by which to make progress to a therapeutics not empirical; and toward eliminating from the traditional heritage of the profession such measures as may have had their origin in superstition or mistaken observation. To use preparations of unknown composition; to use mixtures of innumerable substances, some directly opposed to each other; to use even rational and known combinations of which the ingredients and proportions have not been adjusted to the indications and conditions of the individual case—are certainly not scientific methods or practices likely to advance rational therapeutics.

That much of the flavor of the mystery and witchcraft that at one time appertained to the practice of the healing art should have survived among the vulgar is only a phenomenon to have been expected in the natural course of social evolution. Hence it is that homeopathy and mind-cure and patent medicines have so powerful and so profitable a hold upon the purses of the community, and this not alone among the ignorant and the unlettered. It is a notorious fact that members of the clergy—presumably educated and intelligent men—are among the most prominent and persistent givers of testimonials to the virtues of advertised nostrums, and medical men and medical journals have long made the religious press a target for satire and invective, because of the hold that the advertising quack has secured upon its columns.

In an address to the Medical Society of the State of Pennsylvania at its last meeting, in calling attention to the alliance between the secular press and the empirics and nostrum-venders, I felt justified in saying that the publishers of magazines and newspapers that allowed themselves to advertise the curative virtues of this or that ready-made preparation or alleged remedial measure, to be applied indiscriminately to all cases—whether of one disease or of many diseases—were accessories to a crime against the unfortunate and the helpless; not alone because of the money filched from the pockets of those deluded by the false promises held out to them; not alone because of suffering unrelieved and lives deprived of their chance for prolongation; but in many instances because of the disease and suffering and death directly produced by the poisonous compounds or noxious gases administered to any that chose to purchase. If such criticism was justified—and who is here that will deny its truth?—if such criticism was justified when applied to those who make no pretence of special knowledge or of devotion to a noble art—to those whose object is solely and avowedly commercial—what language remains to characterize the action of medical journals that permit the insertion in their columns of advertisements such as these that I pass around? What severity of reprobation is adequate for

the conduct of the *Journal of the American Medical Association*? What words of condemnation are strong enough for the physician that permits his name to be associated with these devices of the devil?

The frankly unscrupulous patent-medicine vender, the maker of "Safe-cures," or "Temperance Bitters," or "Sure Specifics," is at least to be commended for what, to paraphrase a remark of Senator Benjamin Harrison's, may be termed his "bold brutality." His allegations of philanthropic motives are not intended to be believed; they deceive no one—they are the recognized *ad captandum* devices of the clever advertiser—and, in the sale of his wares, there is no pretence of examination, or of diagnosis, or of prescription based on diagnosis.

Far more iniquitous and far more dangerous to society is the wily manufacturer that advertises "to the profession only." Whether he ostentatiously holds secret the composition of his nostrum, or whether with pretended frankness he describes it with an appellation that means nothing, or publishes a formula that cannot be carried out, his object is the same; he seeks to make the physician's hand whereby he may reach pockets shut from the coarser methods of the Warners, the Pinkhams, and the Jaynes; for, after all, it is the minority that can be deluded by the flaring posters of "Wizard Oil," or the lying testimonials of "Tonic Vermifuge." When a sick man applies to a physician, thinking that thereby he will secure the benefit of special knowledge brought to bear upon the conditions of the individual case, entrusting to the conscience of his medical adviser his health and his life, he is entitled to the skill and the thought for which he pays, and which he deems himself to be receiving. He certainly deserves better treatment than to be handed over to the mercies of "antikamnia," or "febricide," or "quickine," or "gleditschine," or "Freligh's tablets," or "Listerine," or any other of the unholy crew. If such is to be his fate, let him have the satisfaction of buying the worthless or poisonous stuff directly, without the sham of a professional consultation, and without paying a purchaser's commission to the medical sales-agent.

At the coming meeting of the State Society I purpose offering the following resolutions, for which I ask the support of this Society:

Resolved, That the Medical Society of the State of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated County societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession, and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession, and a degradation of journals indulging therein to the level of the patent-medicine almanac. Especially to be condemned is the action of the *Journal of the American Medical Association* in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the permanent Secretary, be sent to all County societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals.

On motion of Dr. J. MADISON TAYLOR, the resolutions were adopted as the sense of the Philadelphia County Medical Society, and the delegates to the Medical Society of Pennsylvania were instructed to officially present and support them.

DR. T. RIDGWAY BARKER read a paper entitled "Does Organic Disease of the Heart Preclude the Use of Chloroform in Parturition?"

In entering upon the discussion of a subject of such paramount importance to mother, offspring, and obstetrician, one cannot lay too much stress at the very outset upon the axiom that "A good remedy will fail of its effect if not properly administered." This fact must be kept uppermost in our minds if we would avoid fatal results, not due, however, to the employment of the agent, as some would make it appear, but to the lack of attention and care exercised in its administration. That there is a radical difference between surgical and obstetric anesthesia (analgesia) goes without saying. If we consider for a moment the stages of anesthesia, which differ only in the profoundness of the impression—first, sopor; second, stupor; and, third, stertor—we cannot fail to observe that in analgesia one rarely has occasion to carry the effect beyond the first degree (sopor), while in surgical anesthesia we are obliged to advance beyond this and keep the patient in the second stage, or that of stupor, thus decidedly increasing the gravity of the prognosis.

In this connection, let us devote a moment's consideration to the progressive effect of chloroform-vapor upon the nerve-centers of the cerebro-spinal system, beginning, as it does, at the inferior extremity of the cord, sacro-lumbar, and gradually extending its paralyzing influence upward until it reaches and expends its force upon the medulla oblongata. These well-established clinical observations having been verified by physiologic experiment, we are justified in putting them to practical application. What other agent, may be pertinently asked, can relieve—aye, abolish—pain so quickly and safely, yet leave reflex muscular contractility unimpaired, as chloroform? Ether and ethyl bromide have found favor with some practitioners, but neither can displace chloroform.

Fordyce Barker states in his writings: "I may say here that I have long regarded chloroform as the best and safest anesthetic in obstetrics, and that since 1850 I have used no other."

The danger from the employment of chloroform in obstetric practice depends more upon the carelessness with which it is administered than to any toxic effect inherent in it. The four cardinal points to be borne in mind in its administration are: First, the admission of plenty of pure atmospheric air; second, the liberation of a small volume of the vapor at a time; third, attention to the respiration; and, fourth, frequent observations as to the force and frequency of cardiac action. That in the recorded cases death has been due in a great measure to saturation of the residual air in the lungs to

a fatal degree can scarcely be doubted. A few deep, forced inspiratory efforts will quickly produce such a condition. Withdrawal of the agent under these circumstances cannot prevent the further entrance of the chloroform-vapor into the circulation, for it already fills the air-cells. Nor will attempts at artificial respiration prove effectual, since but a small quantity of the residual air can be forced out of the lungs, while that which enters fails to sufficiently dilute the vapor owing to the tardiness of diffusion.

Let us not suppose, however, that because we administer to the parturient female small quantities of the drug continuously, no risk is therefore incurred, for experiments directed to solve this important question go to prove that even small doses, when continuously inhaled, tend to produce dangerous, and at times fatal, cardiac exhaustion. Far different is the result when the vapor is given intermittently, as is the unalterable rule in obstetrics. Should we seek authority for the statement that the dangers from the careful administration of chloroform in labor are too insignificant to warrant its refusal, we have only to turn to the *American System of Obstetrics* to find therein the following: "The danger when chloroform is used only to the extent of mitigating or abolishing pain in childbirth is practically *nil*." Lusk, quoting from Bert's experiments, states "that chloroform might be intermittently administered for an indefinite period with safety." These remarks do not apply to its use in the third stage of labor, for, as is well known, after delivery of the child it is likely to occasion relaxation of the uterus, thus favoring post-partum hemorrhage.

Offering the foregoing as a preface to my remarks on the judiciousness of employing chloroform when the parturient female suffers from organic cardiac disease, it now remains for us to consider the effect of parturition upon this enfeebled circulatory organ, thereby securing a scientific basis for our conclusions. In the first stage of labor, we find the muscular contractions confined to the uterine muscular layers and directed toward neutralizing the action of the circular fibers of the cervix, while in the second or propulsive stage not only does the uterus exert its power to the utmost, but also the abdominal and respiratory muscles are brought into action by the will of the parturient in her efforts to expel the fetus. The diaphragm is forced down and its movements paralyzed by the woman holding her breath.

The other respiratory muscles are likewise unable to act, and hence imperfect oxidation of the blood results. As a consequence, the cardiac movements are accelerated, greater resistance is met with in the pulmonary and aortic circulations. Moreover, a tendency exists to venous congestion, as evinced by the hue of the face and the swollen veins.

Owing to the excruciating pain experienced when the head passes through the cervix, the parturient is further tempted to make additional muscular efforts, which only augment the difficulty. Under normal conditions, this strain is of such brevity that it cannot be considered of any importance, but when complicated by disease of the heart is of far greater gravity. If the condition be one of fatty degeneration due to a previous pericarditis or myocarditis, resulting in faulty nutrition and enfeeblement of the heart's action, as evinced by weak impulse,

venous stasis, confused and irregular sounds, anemia alike of brain and of other organs, with faintness and oppression on the slightest exertion, this interference with circulation and respiration may readily tax the powers of the heart too far, and so cause speedy death from paralysis. Here the conditions that pertain in surgical anesthesia are absent. The indications present are to allay excessive muscular action and respiratory spasm, which are threatening the over-stimulated heart.

To allow the woman to continue such efforts is to permit her to commit suicide; to warn her to desist when in such agony is useless; while delay is likely to be fatal. How can we overcome this condition of nervous excitement? Can we accomplish it by the administration of chloroform? Yes; of the two evils, for we must acknowledge that there is an element of risk in giving chloroform, we can only choose the lesser, and so promptly proceed by inhalation to relieve the accessory muscles of parturition of their strain. By the abolishment of pain we lessen the work required of the laboring heart, which, instead of beating at the rate of one hundred and forty or more a minute, may diminish in frequency to ninety or one hundred.

What has been said of fatty heart is equally applicable to conditions of hypertrophy and dilatation.

The equilibrium, if disturbed, is almost certain to result disastrously. If relief is not afforded, the sense of fullness in chest and the oppression due to bronchial congestion become most distressing. The cyanosis (from deficient aëration) is greatly exaggerated, while the insufficient blood-supply to the brain causes syncope and may be succeeded by coma, if the excessive reflex disturbance be not removed. Nor are the indications for the administration of chloroform materially different in the case of females in labor with valvular disease. Whether it be mitral in the young adult or aortic in the aged primipara, the cardiac strain must be relieved if we would save our patient. As is well known, all forms of valvular disease ultimately develop a condition of ischemia on one side with corresponding low tension, while on the other side is stasis with high tension. While, by compensation, life may run on for years, yet, when the strain of parturition comes, it will soon be overthrown if precautions are not taken to prevent it.

Of what benefit will be our knowledge of the value of cardiac "physiological rest," as laid down by Fothergill, if we do not apply it under these conditions? We all appreciate the importance of securing "quietude of mind and body" when such pathologic states exist. Then why not employ the quickest and safest means to obtain it by the inhalation of chloroform? If the danger is great from "active exercise—climbing mountains, running up stairs, lifting heavy bodies, and all kinds of exercise involving heart strain"—how much greater, aye, how immeasurably so must it be when the parturient woman forces, with the anguish of despair, every muscle to its utmost in her desire to deliver her child.

From a study of chloroform-anesthesia in obstetric practice, we have seen how the agent should be administered and how it acts. Surely none will contend that in its employment under these circumstances we act otherwise than for the best interest and safety of our patient. That one may not be charged with being a blind adherent to theory, one has only to turn for support and justification

to the teachings of the late lamented Fordyce Barker, who states: "It seems to be almost accepted as an axiom, with both the profession and public, that the inhalation of chloroform is dangerous for any woman with disease of the heart. For more than thirty years I have been convinced that this opinion is quite erroneous, and I have so taught in my lectures and in former writings." He goes on further to say: "I have seen several cases, complicated by dangerous heart-lesions, that terminated favorably, as I think, solely from the use of chloroform."

Snow, likewise, is of this opinion. "In all forms of valvular disease," he says, "chloroform, when carefully administered, causes less disturbance of the heart and circulation than does severe pain." To quote from *Championnière*: "If," he says, "I recognized an organic affection of the heart, without pulmonary complications, I should rather give the woman chloroform than to let her suffer." Were further proof necessary as to the propriety of employing chloroform-anesthesia, one might include among this group of clinical observers, Vergeley, who expresses himself thus: "Diseases of the heart are not a contra-indication to the use of anesthesia." Macdonald states: "In almost all cases of heart-disease with labor, chloroform has been given, and apparently with benefit, during delivery. If carefully administered, I think it cannot but be useful in all cases." Since such eminent authorities advocate its employment, can we justify ourselves in refusing our patients the benefit and comfort that this agent affords? What is the danger from chloroform compared to the state of exhaustion and collapse into which the parturient woman will inevitably fall? If this heart is forced to the verge of paralysis from overwork and excitement, why shall we not use the means at our command to lessen that strain? Let us have a reason for the faith that is in us, and not hesitate to fearlessly employ extreme measures to overcome extreme dangers.

Chloroform by inhalation can and will, if properly administered, save the lives of parturient women suffering from organic disease, when death seems imminent from over-stimulation of its ganglia through reflex nervous action. Organic heart-disease, then, does not preclude the use of chloroform in labor, but rather is a condition calling for its careful administration.

NEWS ITEMS.

The "Bichloride of Gold" Delusion.—The following preamble and resolution were adopted at a recent meeting of the Hampden (Massachusetts) District, Medical Society:

Whereas, according to common and newspaper report, and upon information and belief, it is known that a member of this Society and fellow of the Massachusetts Medical Society in regular standing, has, by associating himself with one of the most notorious impostors of this century, in the application and use of a remedy for the cure of inebriety, called "bichloride of gold," and whose exact composition it is pretended is known only by, and is the sole property of, a certain individual; and

Whereas, no such stable chemical combination is

possible, and the substance actually used with so much secrecy and profit to the proprietor is and has been employed in suitable cases for years by regular physicians, who well know its limitations and dangers; and

Whereas, by associating himself with a regular physician this pretender hopes to gain prestige and the quasi-indorsement of the regular profession, thus enabling him longer to delude the public; and

Whereas, the association of a regular physician in such a capacity is calculated to injure the public and is degrading to those who are in fellowship with such a physician, and recognizing that "naught but evil can finally result from trifling with moral or physical facts, and that it is better to cure rightly and really than wrongly and delusively," and that by the "humbuggery of secrecy, delusion, and hypnotic suggestion," a far less number will, in the end, receive benefit; and

Whereas, it is the opinion of the members of this Society that the use of the drugs, in the manner employed, for the cure of inebriety by the aforesaid impostor, produces a cerebral stimulation, with intellectual disorders which are sometimes quite serious, together with other grave nervous troubles, themselves constituting a form of inebriety frequently leading to insanity and suicide, and a lowering of vitality, rendering the patient less able to resist and recover from ordinary diseases; and

Whereas, in those cases of inebriety claimed to have been cured by means of this pretended secret method of treatment, it is our opinion that such cures resulted not because of said treatment, but in spite of it, and there seems little doubt that hypnotic suggestion played an important part in effecting said cures, and it is our opinion that in all of the so-called "cures" the result attained could have been better secured by improving the moral condition of the patient, by the use of tonics or hydro-therapeutics, regulating nervous action, and by attention to the digestive tract, without subjecting the patient to the dangers of another form of inebriety, and without the element of secrecy. It is, therefore,

Resolved, That this Society hereby directs its President to refer this subject to a proper committee who shall, before the next regular meeting, ascertain if any member of this Society has identified himself with the manufacture, sale, distribution, or use of any secret remedy, contrary to the Code of Ethics under which this Society is organized, and if so, that such member or members be recommended for expulsion from membership in this Society at said next regular meeting.

College of Physicians; Presentation of Portraits.—A banquet was given by the College of Physicians of Philadelphia on Saturday, April 30th, on the conclusion of which each member drank from the loving-cup to the memory of the late D. Hayes Agnew. Dr. Horatio C. Wood, on behalf of the medical profession of Philadelphia, formally presented to the College a fine portrait of Dr. Alfred Stillé, a former president of the College. The portrait was received by the President, Dr. S. Weir Mitchell. Dr. Mitchell, on his own behalf, presented a portrait of Dr. Oliver Wendell Holmes, accompanying the presentation with a poem. Dr. J. K. Mitchell read a reply in verse sent by Dr. Holmes, who was unable to be present. The portrait was received by the Vice-

President, Dr. J. M. DaCosta, who paid an eloquent tribute to the original of the portrait and to the donor. The exercises also included an address by Dr. J. W. Holland, on the "College"; one by Dr. William H. Welch, of Baltimore, on "Associate Fellows," and one by Mr. Talcott Williams, on "The Patient."

The Association of American Physicians.—In addition to the papers already announced for the meeting of May 24th, 25th, and 26th, the following will also be presented: "The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modifications, and Other Products of the Tubercle-bacilli," by E. L. Trudeau, of Saranac Lake; "A Case showing Symptoms of Landry's Paralysis—Recovery," by A. McPhedran, of Toronto; "The Areas of Anesthesia in Spinal-cord Lesions as a Guide to Localization," by M. A. Starr, of New York; "The Different Forms of Cardiac Pain," by Samuel G. Chew, of Baltimore; "The Late Systolic Murmur," by J. P. Crozer Griffith, of Philadelphia; "Influenza and Some of Its Present Aspects," by Morris Longstreth, of Philadelphia.

A Medical Organization for Social Purposes.—It is proposed to establish a club for social purposes, restricted in its membership to members in good standing in the *Regular Profession* of Medicine in Philadelphia. A modest club-house is to be secured in a central location, to be fitted up with chess-tables, billiard-tables, etc., where meetings can be held, committees have accommodations, and members may congregate for social intercourse. A reading-room is to be opened where may be kept on file the principal medical journals, the literary magazines and journals of the day. It is contemplated to have occasional (monthly or bi-monthly) dinners, to which non-members of eminence may be invited. The fees and dues are to be moderate, ten dollars initiation at present, and annual dues of ten dollars.

Those who may feel interested in the formation of such an association, and who may wish to be present at a general meeting for the purpose of organization, are invited to communicate at an early day with Dr. Lemuel J. Deal, 2119 Howard Street.

The Fourth International Congress for the Study of the Abuse of Alcohol will be opened on September 8, 1892, at The Hague. The following subjects will be discussed: Alcoholism from a moral, hygienic, and medical point of view; The preventive and educational means employed to correct the abuse of spirituous liquors (societies, meetings, the press, popular entertainments); The coercive means available by the State and the community to overcome drunkenness.

Philip Biedert has been elected Professor of Pediatrics at the University of Innsbruck.

Carl Guenther has been appointed an assistant in the Hygienic Institute at Berlin.

The Third International Congress for Criminal Anthropology will be held at Brussels from August 7th to 14th.

Germain-See has withdrawn from the editorial management of *La Médecine Moderne*.

BOOKS AND PAMPHLETS RECEIVED.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane. Providence: The Press, 1892.

Some of the Influences Which Affect the Power of the Voluntary Muscular Contractions. By Warren P. Lombard, M.D. Reprint, 1892.

Intra-thoracic Surgery. By DeForest Willard, M.D., Ph.D. Reprint, 1892.

The Second Year's Work in Diseases of the Rectum at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint, 1892.

Systemic Infection from Gonorrhea. By Bedford Brown, M.D. Reprint, 1892.

A System of Gynecology. Based upon a Translation from the French of Samuel Pozzi. Revised by Curtis M. Beebe, M.D. With 359 Illustrations. New York: J. B. Flint & Co., 1892.

Outlines of Zoölogy. By J. Arthur Thomson, M.A., F.R.S.E. Illustrated. New York: D. Appleton & Co., 1892.

Transactions of the American Orthopedic Association, Fifth Session, held at Washington, D. C. Vol. IV. Philadelphia: Published by the Association, 1891.

Diseases of the Eye. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, M.D. With 216 Illustrations and 2 Chromo-lithographic Plates. Philadelphia: W. B. Saunders, 1892.

Enlarged Tonsils, and Their Harmful Effect on Health and Development. By William T. Cathell, M.D. Reprint, 1891.

The Teachings of Experience and of a Rational Therapeutics as to the Treatment of Pneumonia. By Boardman Reed, M.D. Reprint, 1892.

A Treatise on Medical and Surgical Gynecology. By S. Pozzi, M.D. Translated from the French edition, with Additions by Brooks H. Wells, M.D. Vol. II. With 174 wood-engravings, and 9 full-page plates in colors. New York: William Wood & Co., 1892.

A Junior Course of Practical Zoölogy. By A. Milnes Marshall, M.D., D.Sc., M.A., F.R.S. Assisted by C. Herbert Hurst, Ph.D. Third Edition. London: Smith, Elder & Co., 1892.

Transactions of the American Pediatric Society, Third Session, held in Washington, D. C., September 22 to 25, 1891. Edited by William Perry Watson, A.M., M.D., Recorder. Vol. III. Printed by Fairchild & Co., 1892.

A Text-book of the Practice of Medicine. For the Use of Students and Practitioners. By R. C. M. Page, M.D. New York: William Wood & Co., 1892.

Text-book of the Eruptive and Continued Fevers. By John William Moore, B.A., M.D., M.Ch. Univ. Dubl. New York: William Wood & Co., 1892.

Diseases of the Nervous System. By Jerome K. Bauduy, M.D., LL.D. Second Edition. Philadelphia: J. B. Lippincott Co., 1892.

Lectures on General Etiology, Delivered at the Chicago Medical College. By H. Gradle, M.D. Pamphlet. Chicago: W. T. Keener, 1892.

Intestinal Anastomosis and Suturing. By Robert Abbe, M.D. Reprint, 1892.

A Contribution to the Study of Headaches. By Joseph Collins, M.D. Reprint, 1892.

Cases of Gall-bladder Surgery. By Robert Abbe, M.D. Reprint, 1892.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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